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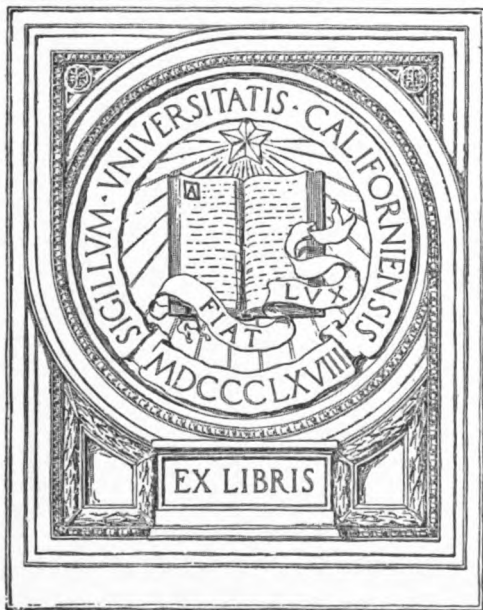
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THE
GLASGOW MEDICAL JOURNAL.

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ORIGINAL ARTICLES.

REMARKS PRECEDING A DEMONSTRATION IN THE
GLASGOW ROYAL INFIRMARY, 19TH NOV., 1897.

By J. K. KELLY, M.D.,

Physician for Diseases of Women, Glasgow Royal Infirmary ;
Lecturer on Gynæcology, St. Mungo's College.

PERHAPS the best way to utilise the short time at our disposal will be to precede the demonstration of the cases we have at present in the ward by a review of the general work done in the ward during the past half year. Such a review will best show you the kind of work we are doing here, inasmuch as the small number of our beds does not permit us to have such a variety of cases in at one time as to make them always a fair sample of the whole. We would require double or treble our present number of beds to deal satisfactorily with the number of cases sent to us, and to make our gynæcological ward a fair representative of the proportion of such cases met with in general practice, as well as a profitable field in which our students could follow out this branch of medical science.

It has hitherto been the custom in this infirmary to disperse the gynæcological cases throughout the various female wards, and under the care of the various physicians and surgeons. But this is a custom which is prejudicial both to the progress of gynæcology as a branch of science, and to the study of these

cases by the students who frequent the hospital. It is everywhere recognised that the grouping and study of special cases together is the proper method of gaining an exact knowledge of disease, and certainly for our students the difficulties of gynaecology are only to be mastered by an assiduous study of a considerable number of cases brought under their notice. It is unfortunate that our students should have to go to Berlin or some other Continental city for instruction in this subject, when material for their study is as plentiful at home, and needs only to be brought together to be of use to them. Perhaps, when we have our remodelled infirmary, some regard will be paid to the needs of this department.

During the summer half year, which, owing to cleansing arrangements, consisted only of four months, we had 68 cases under our care, making in all 176 cases in the year.

Metritis is, of course, the disease which gives us the highest percentage of cases. Of this there have been 9 cases in the summer months, making 30 cases throughout the year, or about 1 in every 6. For this disease our ordinary treatment is the hot douche and curettage of the endometrium. If the uterus is much enlarged, we combine with the curettage an excision of wedges of tissue from the anterior and posterior lips of the os. These operations, and the rest which the patients have while in the ward, benefit them to a considerable extent, but I have never the same feeling of satisfaction after treating a metritis as I have after, say, the removal of an ovarian cyst. There is not, by any means, the same certainty that you have cured your patient. Perhaps it is the case that a uterus once diseased can never again be perfectly healthy, but if restoration of function is any test of the health of an organ, that test has been frequently satisfied in the case of the uterus after operation for metritis.

Next in frequency after metritis comes *cancer of the uterus*. Of this we have had 7 cases, or 10·3 per cent, nearly the same proportion (11 per cent) as in the first six months of the year. These proportions indicate the frequency of this disease. In none of the 7 cases was it possible to extirpate the disease, and we had to be content with merely palliative measures. To my mind there is no better illustration of the danger of neglecting little things than the advanced stage at which cancerous disease comes under our care. If the medical profession, and through its influence the general public also, could lose the idea that woman is more prone to complaint and less able to bear pain than man, and that therefore too much attention should not be paid to her minor ailments, we

should soon see a diminution in uterine cancer. And this form of cancer constitutes not only the great majority of cases of cancer that affect the female sex, but almost the half of all the cases that affect both sexes. This attitude towards female ailments must be abandoned if we are ever to succeed in diminishing the extent of this disease. The ages of our patients were, two at 37, one at 42, two at 44, one at 49, and one at 50 years.

We have had 5 cases of *extra-uterine pregnancy*, which, with the 4 cases we had in the first half of the year, make 9 cases in all, or about 1 in 20. I would draw your attention to this fact, and also to the fact that my friend, Dr. Edgar, has in about the same period had other 9 cases, an account of some of which you will find in the *Glasgow Medical Journal* for September and October, 1897, making nearly a score of cases occurring during the past year in the practice of two gynaecologists in Glasgow alone. There has been at least one other case operated on in the Royal Infirmary here, and, no doubt, other surgeons in Glasgow have had cases under their care during the same period. What I wish to impress upon you is this, that this condition is not a rarity, as it was supposed to be up till quite recently, that it is at the bottom of much of the formerly inexplicable troubles with which women are affected, that it can be recognised even more easily than many other well recognised diseases, and what is even more important, can be treated with very much greater certainty of success. I may read you a short account of a typical case.

Mrs. K., æt. 30, always healthy, has had three children, the last three years ago, was admitted to Ward 30, on 29th June, and gave the following history of her present illness:—

On 8th June she was suddenly seized with severe pains in the lower abdomen, like labour pains, accompanied by faintness. Her doctor was sent for, but before he arrived there was a profuse discharge of thick reddish material from the vagina, and the pain was somewhat relieved. After two days, however, the pains returned, were of a bearing-down character, and caused her a constant desire to pass water. This she could only pass easily when in the erect posture. The pains and discharge continued, but were less severe until 26th June, when she had a violent attack similar to that of 8th June, but accompanied by greater faintness and by a profuse sweating. This severe pain has continued ever since, and although she has frequent tenesmus, and has attempted defæcation frequently, she has been unable to discharge fæces since the attack three days ago. Indeed, it was as a case of intestinal

obstruction that she was sent into hospital. She complains of severe pain in the rectum. There is still some sanious vaginal discharge. Her last menstruation was on 19th April, seven weeks before the attack of illness on 8th June, and ten weeks before admission to hospital.

What did this history indicate? Here was a woman who was probably pregnant. In the seventh week of her pregnancy, counting from her last menstruation, she is suddenly seized with abdominal pain and faintness, accompanied by vaginal discharge. She is like a woman having an abortion, but is, perhaps, more collapsed than the amount of apparent hæmorrhage would account for, and there is pressure upon the pelvic organs, manifested chiefly by bearing-down and desire to micturate. From this she is slowly and imperfectly recovering, when, eighteen days after, she has a second attack similar to the first, but associated with more profound collapse and increased pain, and now the pelvic pressure, which formerly chiefly affected the bladder, is exerted upon the rectum as well.

Symptoms such as these pointed almost certainly to an effusion in the pelvis; the sudden development and the faintness indicated that the effusion was due to hæmorrhage; the history pointed to repeated hæmorrhage, and the association of this with pregnancy indicated that the hæmorrhage was due to a ruptured tubal pregnancy; that, in fact, we had a hæmatocele.

The physical signs entirely confirmed this inference. The note made on the morning after her admission was as follows:—"Fulness in hypogastrium; dulness to percussion over right iliac region, and extending nearly to middle line. Distinct tumour in right side corresponding to dulness, but reaching to left of middle line, nearly half way between umbilicus and A.S. spine. *Per vaginam*, Douglas' pouch is distended by fluid effusion. Right fornix is full, and uterus is pushed slightly to left. Left fornix is free. Cervix is carried forward towards the symphysis by the collection in Douglas' pouch. There is pain on pressure over tumour."

Perhaps it may interest you if I also read the note made of the operation, which was done on 1st July, the second day after patient's admission to the ward:—"Abdominal section under ether. Great quantity of clotted blood occupied pelvis and lower abdomen. Right tube first raised out of mass, and found to contain a large fleshy mole in outer part. Ligatured on both sides and removed. Left tube also cystic; found to contain blood in outer part. Ligatured and removed in same way. Blood clots were firmly adherent to sigmoid and rectum, and

were removed with great difficulty, quantities of sterilised water being used as a douche. Douglas' pouch packed with iodoform gauze, end of which was left protruding at lower part of abdominal wound." Except for a slight cystitis due to the use of the catheter, this patient went on perfectly well, and left hospital on 30th July, four weeks after the operation.

There have been five cases of *puerperal inflammation*, and with regard to these we can only repeat what has been often said of the necessity of care at childbirth. It has been proved over and over again that the danger attending childbirth arises in the immense majority of cases from infection, and in infinitely less degree from the mechanical difficulties grouped under the term *dystocia*. It has also been shown that with proper precaution childbirth may be rendered absolutely free from this danger. It lies, therefore, with our profession to enforce, as far as we can, the general use of these precautions.

The rarer dangers that attend pregnancy I may illustrate by brief reports of two cases. The first is a case of *inversio uteri*.

Mrs. F. æt. 22, admitted on 23rd July, had her first child on 7th July (sixteen days before admission). The labour was difficult, and forceps had to be applied. After the child was born, patient had severe pains all over the body and a discharge of blood from the vagina. These have continued till her admission to hospital. The greatest pain was on the left side and over the lower part of the abdomen. She felt a lump in the vagina, and her mother applied vaseline to it daily. As patient was getting weak, her doctor advised her to be sent into the infirmary. Since the birth of the child micturition has been painful, and the parts around the vulva very tender.

As I was in the ward when this patient was admitted, and the symptoms were urgent, she was at once put under ether, and an examination was made. The note of the examination is as follows:—"Vagina is occupied by a rounded tumour, about size of fist, which comes nearly to the vulva, and presents a roughened red moist surface. On examination, the base of this is found surrounded by the os uteri, dilated to about the size of half-a-crown, and with firm sharp edge, especially anteriorly. When the finger is passed into the os, the cervix is found to be continuous all round with the base of the tumour. No uterus is felt above."

There was no doubt as to the nature of the case, and as the patient was already anæsthetised, we proceeded at once to reduce the uterus. This was done with some difficulty in about thirty-five minutes, and a hot intra-uterine douche was

given. This was repeated night and morning for a few days—till the 28th—and on the 31st July this patient went home quite well.

Inversion of the uterus is rare, and ought never to be met with if the third stage of labour is properly conducted, but *gangrene of the abdominal wall* in pregnancy is even more rare.

Mrs. C., æt. 36, pregnant fully eight months with her seventh child, was admitted on 19th July. Patient states that after the birth of one of her children, about ten years ago, she had a severe pain across lower abdomen. This pain was of a twisting character, and she often had to lie down when it came on. She seems to have been suffering from a ventral hernia at that time. She attended Dundee Infirmary, but did not allow an operation to be performed. She was advised to wear a binder to keep up the swelling. During the present pregnancy she has been walking about a great deal, with the result that the skin over the ventral hernia for about 4 or 5 inches above the umbilicus has become gangrenous. She noticed the black appearance of the skin about a week ago. Patient has an enormous pendulous abdomen, measuring 61 inches round the umbilicus. There is a black gangrenous patch, $3\frac{1}{2}$ inches long by 3 inches broad, a little above the umbilicus, and this is surrounded by a thickened cedematous border, 13 inches long by 9 inches broad. Fœtal movements marked. This woman was kept at rest, and antiseptic applications made to the abdomen. There was no spread of the inflammation in the skin, and the whole cedematous patch proceeded to form a slough. As soon as this separated we transferred her to the Maternity Hospital, where labour was induced with a view to have the whole process under control, it being feared that if labour were left to nature there might be some laceration of the parietes. The delivery was effected without accident, and recovery was perfect.

Among other results of pregnancy we have had five cases of *lacerated perineum* and four cases of *abortion*. The cases of abortion sent in here are usually those in which hæmorrhage persists as the result of retention of some part of decidua membrane, and the treatment for such cases is the immediate and complete emptying of the uterine cavity with the curette, and the subsequent use of the intra-uterine douche for some days. Usually with the removal of the ovum remains the hæmorrhage ceases at once, and the patient rapidly recovers.

In relation to pregnancy, however, and illustrating the grave complications that sometimes arise in the course of that normal function, I would like to call your attention to the remarkable

specimen I have here. This is a specimen of *deciduoma malignum*, a disease which has been recognised only within the last few years. A very full account of the cases already published is given in the new edition of Hart and Barbour's manual.

Mrs. L., æt. 27, admitted 20th September, has had two children, the last four years ago. When, as she thought, three months pregnant, seven months ago, she began to bleed. This continued for four months. Labour pains then set in, and her doctor removed a mole from the uterus. The hæmorrhage, though lessened, still continued, and was thenceforward accompanied by pain. At the end of six weeks she again called upon her doctor. He examined her *per vaginam*, and thereupon severe hæmorrhage set in and lasted all the way home. As she continued to lose a large quantity of blood, her doctor sent her into hospital. On 10th August (six weeks before admission here) "an ulcerating hæmatoma" was removed from the anterior vaginal wall. Bleeding has continued, but in less quantity, since then. The pain in the pelvis has continued also, but the chief complaint is of hæmorrhage.

On admission patient was anæmic, but otherwise healthy-looking, without emaciation, with rounded cheeks, bright eyes, and cheerful expression. Heart and lungs normal. Palpation over ascending colon causes dull pain. There is pain also of same character in right iliac region. Elsewhere palpation is normal except for slight fullness above inner half of right Poupert's ligament. *Per vaginam*, a firm rounded mass, in size and shape resembling a finger, bulging out the vaginal mucous membrane, and evidently occupying the vaginal wall, passes obliquely from the urethral swelling upward and to the right, where it terminates in a rounded end about an inch below right vaginal fornix. On the posterior vaginal wall is a smaller rounded nodule presenting the same character as the finger-like mass. Higher in the pelvis than this vaginal tumour, and separate from it and occupying the whole region of the right broad ligament, is a large mass, slightly irregular but generally rounded on the surface. This mass (fundus uteri?) presents slight mobility, and when moved the cervix moves with it. Os is patent; edges present several follicular elevations. Sound passes in normal direction 2½ inches. Left appendages normal. Slight bleeding going on. Our diagnosis was sarcoma of the vagina with probably some condition of the right Fallopian tube causing the uterine hæmorrhage. The situation of the vaginal tumour, however, made it difficult to

ascertain the condition of the tube on the right side by bimanual examination. There was apparently nothing alarming in her present symptoms, and we were not impressed as perhaps we should have been by the history. A consultation was called for 25th September, but on the 24th, about 7.30 P.M., shortly after supper, severe uterine hæmorrhage set in. It lasted more or less all night, and from this point we may note in detail the course of the illness.

25th September.—This morning patient is excessively anæmic, with weak, rapid pulse, sighing respiration, great restlessness, and frequent vomiting. Patient complains of increase of pain in the right side. In afternoon pretty severe diarrhoea, but less vomiting, pulse rallying; subcutaneous infusion of salt solution. In evening more comfortable. Pulse still feeble, but not so rapid as in the morning. Only slight oozing from vagina. Vomiting and diarrhoea have ceased.

26th September.—Feels much better this morning. Has slept, and taken food well. Pulse much stronger, but still rapid (124). Slight discharge from vagina.

27th September.—Very little discharge since yesterday. Pulse still 124. Hot intra-uterine douch given this morning. Patient complains of some pain in left side of thorax, and there is an occasional cough. No friction sound or râle detected.

28th September.—Much better this morning, temperature and pulse both declining. Taking food well, and without sickness. Still some pain in left side. Occasional streak of blood in expectoration.

29th September.—Uterine hæmorrhage has now quite ceased. Pulse fuller and stronger (96). Taking food well.

30th September.—Some bleeding during the night, but only in small amount. A few small clots lying on fundus of vagina. Uterine hot douche used. Fluid returned quite clear. Some pain in right side.

1st October.—Some oozing from uterus still, but very small in quantity. Hot intra-uterine douche.

3rd October.—Patient had an intra-uterine douche yesterday afternoon (3 P.M.). Felt well afterwards, and continued so till after tea, when a severe hæmorrhage suddenly set in, resembling the bleeding on 24th September—nine days previously. At 10 P.M., under chloroform, a considerable quantity of firm substance, consisting mostly of what seemed consolidated blood-clot, was removed from interior of uterus by finger and curette. Considerable difficulty was felt in separating it from the uterine wall, with which it was closely amalgamated, and

so unlike an abortion. Hot (120°) douche used, and uterus packed with iodoform gauze. This morning patient has some slight pain in the hypogastrium, but is otherwise well. Hardly any oozing, and apparently only from the fluid left by the douche. Gauze left untouched.

(From the condition I found when curetting I now feared I had a case of deciduoma malignum to deal with. A piece of the tissue removed when examined microscopically showed only "decidual cells," but not, to my mind, arranged in the ordinary way.)

4th October.—Gauze changed under chloroform. Pulse, 120; temperature, 101·6°.

5th October.—Gauze changed under chloroform. Tumour again growing from inner surface of uterus, smooth on surface and suggestive of sarcoma. No bleeding. Pulse, 110; temperature, 99·8°.

7th October.—No bleeding yesterday when gauze was changed, and none since. Patient slightly sick, and very depressed. Pulse, 118; temperature, 100·6°.

8th October.—Sickness has continued and is rather worse. Temperature rose last night to 102·4°; pulse, 128. To-day temperature, 100·4°; pulse, 112. Gauze finally removed, and intra-uterine douche given.

9th October.—Last night patient's speech became rather indistinct for a time, and this morning she has still some difficulty in expressing herself, words being badly formed, and at times uttered correctly only after several attempts. Still complains of sickness, and has taken very little food. Pulse, 120; temperature, 101·2°.

10th October.—Has had some diarrhoea. Five stools in twenty-four hours. Slight pinky discharge from vagina. Pains in limbs. Pulse, 120; temperature, 102·2°.

11th October.—Easier, but pulse, 124; temperature, 101·2°.

12th October.—Listless and depressed; wishes to die. Pulse, 124; temperature, 104°.

13th October.—Exhausted. Pulse, 112; temperature, 100·6°.

14th October.—Firm rounded mass—uterus or parametric effusion—in right iliac region above Poupart's ligament, slightly tender to pressure. Patient troubled with some sickness, but otherwise slightly better. Pulse, 120; temperature, 101·6°. Legs painful and powerless.

15th October.—Feels better, but excessively weak. Pulse, 112; temperature, 100·8°.

16th October.—Tumour in right side remains the same in size as on 14th, almost painless to touch. Still pain in legs

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occasionally. Slight pinky vaginal discharge. Pulse, 120; temperature, 101°.

17th October.—Feels much the same. Taking very little nourishment. Tumour in right iliac region rather larger. No discharge from vagina. Pulse, 120; temperature, 102·6°.

18th October.—Very sick, and both physically and mentally depressed. Pulse, 132; temperature, 103°.

19th October.—Pulse increased in rapidity. Temperature continued about 102°, and patient died at 8·20 P.M.

TABLE OF CASES ADMITTED DURING SUMMER HALF-YEAR, 1897.

Metritis,	9	Myoma,	2
Cancer uteri,	7	Anæmia,	2
Retroversion,	6	Abscess of Bartholin,	2
Puerperal inflammation,	5	Salpingitis,	2
Ectopic gestation,	5	Inversio uteri,	1
Lacerated perineum,	5	Gonorrhœa,	1
Abortion,	4	Pregnancy,	1
Ovarian cyst,	4	Atrophy of uterus,	1
Prolapse,	4	Stenosis of cervix,	1
Oöphoritis,	3	Hypertrophy of cervix,	1
Parametritis non-puerperalis, 3		Gangrene of abdominal walls, 1	

CASES SHOWN IN WARD.

Hæmatocele, one of which had been operated,	2
Ovarian cyst,	1
Repair of perineum,	1
Ventrofixatio uteri and repair of perineum,	1
Cervical polypus,	1
Cervical and vaginal cancer,	1
Endometritis hæmorrhagica, which had been treated by curettage,	1
Pregnancy, where the question of tubal pregnancy had arisen,	1
Vulvitis syphilitica,	1
Puerperal cellulitis,	1

ANTE-PARTUM HÆMORRHAGE, WITH A TABLE OF
FIFTY-ONE CASES OF PLACENTA PRÆVIA.¹BY ROBERT JARDINE, M.D.,
Physician to the Glasgow Maternity Hospital.

DURING the past year I have had the misfortune, or perhaps some would say good fortune, to have to treat a number of cases of ante-partum hæmorrhage, both in private and hospital work. I purpose giving notes of these and a few others which occurred in the Maternity Hospital during the year, but not when I was in charge. I have also gone over the records of the hospital for the past sixteen years, and have tabulated all the cases of placenta prævia along with the cases I had at the Branch, making, with the present ones, fifty-one in all.

I shall first give notes of the cases of placenta prævia or unavoidable hæmorrhage, beginning with two private ones.

CASE I.—Mrs. L., æt. 25, ii-para. She came under my care in May, 1896, suffering from inflammatory thickening of the broad ligaments, enlargement of both ovaries, and endometritis. By August the inflammatory thickening had cleared up, but the right ovary was still about the size of a small orange. When she was six months pregnant I examined her, but could not detect the ovary, nor was it to be felt after the confinement.

When eight and a half months pregnant, hæmorrhage came on one night as she was retiring to bed. When I saw her an hour later the os was about the size of a half-crown, and the placental margin was easily felt at the posterior part of the os. It was thus a marginal placenta prævia. The membranes were intact, and the head presenting. The hæmorrhage had not been very great and had ceased. Curiously enough she had not felt any pain, although the uterus was contracting actively. As the head was pressing down very firmly, I decided to rupture the membranes and stimulate the uterus by friction and wait, intending if hæmorrhage came on to dilate manually, turn, and bring a foot down. Dilatation went on slowly, with scarcely any bleeding, and about five hours later

¹ Read before the Glasgow Obstetrical and Gynæcological Society, 24th November, 1897.

a live female child was expelled by natural efforts. A hot douche checked the slight post-partum bleeding. She made a good recovery, and the child has done well.

CASE II.—Mrs. D., i-para, æt. 28. I saw this case in consultation with Dr. David Christie, and am indebted to him for the following notes. When between six and seven months pregnant she went to Rothesay on holiday, and was there seized with a hæmorrhage. A doctor saw her, and kept her in bed for a fortnight. The bleeding ceased, and she experienced no further trouble until she was into her ninth month, when hæmorrhage came on again. She was kept in bed for three weeks, and during this time she had a discharge of blood, continuous though small in quantity. At the end of the three weeks, labour came on. Up to this time examination of the vagina had not revealed anything further than that the os was slightly patulous.

The labour began about 4 P.M., and when Dr. Christie examined her at 10 P.M. he found it was a case of complete placenta prævia. I saw her with him in consultation shortly afterwards, and found she had lost a considerable amount of blood. The os was nearly fully dilated, and the greater part of the placenta separated, only about one-third of it being still adherent. We determined to deliver at once, but were met with the patient refusing to take chloroform. She was so sensitive that I felt it would be useless to attempt delivery without anæsthesia. Fortunately, her friends remonstrated with her and gave us a free hand, so we took the law in our own hands. After a whiff of it she consented and took it well. I delivered with forceps, and to my surprise the child was alive. There was considerable post-partum bleeding, so I removed the placenta at once and gave her a very hot douche, which quickly checked it. She was also given a hypodermic injection of ergotin, and stimulated by the mouth. A pint of saline fluid was injected into the rectum. She progressed very well until the fourth day, when she began to complain of severe pain in the region of the left shoulder. Her temperature rose to 105°, pulse 130 to 140, respiration 60 per minute, and she looked as if she were dying with all the signs of a pulmonary embolism. In two days these symptoms began to subside, and she then convalesced rapidly.

CASE III.—Mrs. G., æt. 30, viii-para, admitted to hospital 19th November, 1896. Hæmorrhage had first come on, two days previous, after she had done a heavy washing. It was at

first slight but recurred at intervals, and this morning it had been very severe. She did not consider herself at full time, but she could not give the date of her last menstruation. There had been no labour pains.

On admission she was not actually bleeding, but she seemed very weak. The pulse was 80, and feeble. While in the reception room hæmorrhage came on, and she was at once removed to the labour room, and the vagina plugged with a kite tail plug, to allow of her being washed and dressed. After this was done the plug was removed, and a vaginal examination revealed that the placenta was situated to the right and somewhat encroaching on the os, which admitted two fingers. The foetal heart could not be heard, but foetal movements were felt. Bipolar version was effected under chloroform, and a foot brought down. The case was then left to nature, and the child, which was stillborn, was expelled three hours later. The placenta followed naturally, and the uterus contracted well. There was no bleeding during or after delivery. She made a good recovery.

CASE IV.—Mrs. W., æt. 24, iv-para. Admitted 31st August, 1897. This patient had had a severe flooding five weeks before at her home. She was seen then by two students. She states that she had lost a good deal of blood. A fortnight ago there had been a slight recurrence. She was then seen by the house surgeon, who diagnosed complete placenta prævia. The os was about the size of a two-shilling piece. Next day she was admitted to the hospital, and remained in bed for five days. There was no bleeding during that time. She left the hospital against advice, but promised to return on the slightest reappearance of hæmorrhage. A slight amount of bleeding occurred on 31st August. She was seen by the house surgeon, who plugged the vagina, and brought her to hospital at 7 A.M. At that time the os was about the size of half-a-crown, and the placenta was found detached laterally and in front but still adherent behind. At 9 A.M., under my directions, Dr. Bain delivered her. He freed the placenta from the cervix behind and easily dilated the os until he could pass his hand into the uterus. Version was easily effected, and a live premature male child delivered. A second child then also presented by the head. It was in a sac of its own. It was also easily turned and delivered alive. It was a female. The placenta of the second child was attached close to the first, so that a portion of it was within the area of placenta prævia. She made an excellent recovery. The boy weighed 4 lb. 10 oz.,

and the girl 4 lb. I believe they both died of bronchitis when about a month old.

Of the fifty-one cases tabulated this is the only one of twins. In 1874 the late Dr. Angus Macdonald reported a case. Both foetuses were transverse, and both placentæ were felt at the internal os. He regarded it as a very uncommon occurrence, and asserted that it probably only happened once in 44,500 cases of labour. Barnes speaks of it as not uncommon, and Winkel maintains that it is relatively four times more frequent in plural than in single pregnancy. The records of the Maternity Hospital are in favour of Macdonald's view.

CASE V.—Mrs. M'D., æt. 24, iii-para. She was first seen by a nurse on the afternoon of 13th September. Bleeding was said to have been going on for ten hours. The house surgeon saw her shortly afterwards, and found there had been considerable hæmorrhage, but the patient was not collapsed. The head presented, and the os was about the size of a florin. The edge of the placenta was felt posteriorly at the os internum. The vagina was plugged, and the patient brought to hospital. When I saw her the os was easily dilated manually under chloroform and a foot brought down. The child was alive, but too premature to survive. It weighed 26 oz., and died in two hours.

When the placenta was expelled it was found to be pyriform in shape; the apical portion was dark in colour where it had been separated.

This patient was suffering from subacute rheumatism. She had a normal puerperium. Under alkalies her condition improved very much.

CASE VI.—Mrs. G., æt. 33, iv-para, admitted 20th September. This patient was brought to the hospital in an ambulance waggon from Renfrew by Dr. Hill. She had had hæmorrhages of varying severity for the last six weeks. On the evening of 19th September hæmorrhage was pretty severe. Dr. Hill plugged the vagina and brought her in, arriving at 6.15 A.M. On admission she was very weak and blanched; pulse, 112, and thready. Before I reached the hospital the plugs had been expelled, rapidly followed by the placenta and then a dead child. There was no post-partum hæmorrhage. The membranes came away of themselves.

We decided to transfuse, and this was done through the

median basilar vein by Dr. Webster, the resident. A pint of sterilised saline solution was used (1 dr. of equal parts of bicarbonate of soda and potash to the pint). The pulse at once improved in volume and strength.

The patient made an uninterrupted recovery.

CASE VII.—Mrs. R., æt. 38, ix-para, admitted 8th October, 1897. A nurse saw this patient at 7.30 P.M. Hæmorrhage had been going on for two hours. The patient was blanched.

Dr. Barker, the out-door surgeon, diagnosed lateral placenta prævia, plugged the vagina, and brought the patient into hospital. In my unavoidable absence Dr. Black examined her, and found he could get one finger through the os, which he gradually dilated. He stripped the placenta from the lower zone of the uterus, and found the ribs presented. He brought down a foot. In the course of an hour the body was expelled, but the head was still grasped by the cervix. Dr. Edgar, who was on duty in my absence, then arrived and took charge of the case, and delivered the head. After the placenta was delivered hæmorrhage continued, and a large tear of the cervix was discovered. An attempt was made to control the hæmorrhage by stitching.

Intravenous transfusion of a saline fluid to the extent of 8 pints was tried, but the patient died at 1.30 A.M. on 9th October, about an hour after delivery. The uterus was removed *post-mortem*, and I now show it. You will see there is a large tear involving the side of the cervix and extending right up into the body. A large vessel, perhaps the uterine artery, must have been torn through. The stitches, you will observe, are confined to the vaginal portion of the cervix, and the tear extends far above the upper one. The attempt to stitch the tear was made under very great disadvantages, and you can see that without opening the fornix one could not have reached the upper part. When dealing with the cases of accidental hæmorrhage I shall shortly have to relate a very similar case which occurred under my care a few days before this, in which I felt it was impossible under the circumstances to attempt to stitch, and trusted to plugging.

CASE VIII.—Mrs. T., iv-para, æt. 27. This patient was seen by the out-door house surgeon at 9 P.M. on 25th October. She had been bleeding more or less for a week. The loss had been pretty severe that evening. Her general appearance was good, and her pulse fairly strong.

The head presented, and the placenta was easily detected

detached at its lower border, which reached the os. The vagina was plugged, and the patient brought into hospital. On removing the plug, the os was found the size of a half-crown. Under chloroform bipolar version was easily effected by Dr. Barker under my supervision, and a foot brought down. Gentle traction was kept up, and the os allowed to dilate slowly. The child was delivered over an hour after turning. It was stillborn about the seventh month. There was no post-partum bleeding. The patient made an uninterrupted recovery, and left the hospital ten days later.

Treatment.—In the *American Text-Book of Obstetrics* the following statement is made:—"There is no single method of treatment in placenta prævia applicable in all cases and at all times; therefore the obstetrician will act most wisely who chooses means corresponding with the special features of the case in hand and with the emergencies that arise." I entirely agree with that statement. In the cases just related various methods were employed.

Of late the vaginal tampon has been very highly spoken of, but to adopt it in every case would be a fatal mistake. If properly applied it will check the hæmorrhage and ensure dilatation, but if the vagina is not thoroughly plugged it is worse than useless. It is most useful before dilatation of the os, or in cases where removal of the patient is necessary. The strictest antiseptic precautions must be taken. It should not be left in for many hours, and the patient should be carefully watched. On removing it the os will usually be sufficiently dilated to turn by the bipolar method and bring a foot down. The case can then be left to nature if the os is not dilated sufficiently to allow delivery without risk of laceration of the cervix.

Bipolar version is one of the best methods of treatment. It can be done when the os will admit two fingers, and is therefore applicable to many cases. When the thigh is drawn down into the cervix, the very best plug and dilator is secured. Bleeding will cease, and the cervix become quickly dilated. Gentle traction will assist this and check any hæmorrhage, but one must not yield to the temptation to deliver quickly. Laceration of the cervix is a dangerous accident in an ordinary case, but much more so in a placenta prævia on account of the vascular condition of the parts.

Podalic version was the method most generally adopted in the cases tabulated. If the os is sufficiently dilated to allow the hand to be passed in, this can be quickly done. If

the cervix is soft you can generally dilate it sufficiently to pass your hand, or Barnes' bags or Champetier de Ribes' single bag can be used. The latter I have not used in placenta prævia, but it should be most useful provided it did not burst. I have had three of them burst, and shall shortly relate a most unfortunate accident with one of them.

In the central or complete variety, if you cannot strip the placenta off so as to pass your hand round it, it is better to push your hand through it.

In either variety if the os is sufficiently dilated delivery should be accomplished at once, either by turning or forceps. Forceps, perhaps, gives a better chance to the child.

In one case all I did was to rupture the membranes and wait. In the lateral or marginal varieties this may suffice, provided the presenting part of the child will act as an effectual plug and dilator, and you watch your case closely. This method has lately been advocated as applicable to all cases, but I should be very chary of trusting to it except in such cases as I have indicated. It is claimed that strong contractions will come on when the liquor amnii drains away, but unfortunately this is not always the case, and if you have to turn, the operation is rendered much more difficult and the bipolar method practically impossible.

In the central or complete variety it has been suggested to push your finger through the placenta and strip the amnion off the inside of the placenta without rupturing it, and allow it to protrude through the opening to act as a dilator and plug. This seems to me a very precarious method. The amnion is said to be easily stripped off, but it is far too weak a membrane to act as an efficient plug and dilator.

Stripping the placenta off as high as one can reach is sometimes very useful in checking the hæmorrhage, and it allows dilatation to take place more rapidly, but it diminishes the chances of the child.

As soon as the child is born one must be prepared to deal with any post-partum bleeding which may occur. The uterus should be firmly kneaded, and if there is any bleeding the placenta should be removed at once and a hot intra-uterine douche (120°) given. Water which has been boiled does perfectly well. In all cases we used 1 in 300 creolin solution. In all cases of intra-uterine douching after operations we use at least 2 gallons of this. Ergotin should be given hypodermically, and if there is great prostration stimulants should be freely administered, and hot bottles placed about the patient.

CASES OF PLACENTA PRÆVIA.

No.	Age.	Para.	Variety.	Presentation.	Treatment.	Result.		REMARKS.
						Mother.	Child.	
1	19	ii.	Lateral.	Leg & arm.	Podalic version.	Alive.	Dead.	Child very weak. 5th month. Contracted pelvis, full time.
2	29	viii.	"	Cranial.	Ripolar version.	"	Alive.	
3	22	ii.	"	"	Podalic version.	"	Dead.	
4	24	iii.	"	Transverse.	"	"	"	
5	30	vii.	"	Cranial.	"	"	"	Secondary hæmorrhage, 12th, 13th, and 14th days. Full time child.
6	19	i.	"	"	"	"	"	
7	28	vii.	"	"	Forceps.	"	"	
8	39	vi.	Complete.	"	Tampon, podalic version.	"	"	
9	38	x.	"	Breech.	Tampon, Barnes' bags, leg drawn	"	"	Post-partum hæmorrhage. Full time child. Macerated premature child.
10	26	iv.	"	Cranial.	Podalic version.	"	Alive.	
11	34	vii.	Lateral.	"	"	"	"	
12	30	i.	"	"	"	"	"	
13	33	i.	"	"	Barnes' bags, podalic version.	"	"	Had placenta prævia, and trans- verse vii pregnancy.
14	35	viii.	"	"	Tampon, podalic version.	"	"	
15	24	iii.	"	"	Podalic version.	Died.	Dead.	
16	25	vii.	Complete.	"	Tampon, podalic version.	Alive.	Alive.	
17	34	ix.	Lateral.	Transverse.	Podalic version.	"	"	Placenta partially adherent; child died 2nd day. Saline rectal injection.
18	30	v.	"	Cranial.	Tampon, podalic version.	"	Dead.	
19	31	viii.	"	"	Delivered by natural efforts.	"	Alive.	
20	23	iv.	Complete.	"	Barnes' bags, podalic version.	Died.	Dead.	
21	28	vii.	Lateral.	"	Podalic version.	Alive.	Alive.	Full time; 3rd placenta prævia; cardiac disease; first flooding was at 4th month.
22	34	vii.	"	"	Barnes' bags, podalic version.	"	Dead.	
23	33	ix.	"	"	Podalic version.	"	"	
24	34	ix.	"	"	"	"	"	
25	25	ii.	"	"	Delivered by natural efforts.	"	Alive.	

If the hot douche fails to stop the hæmorrhage, one may plug the uterus and vagina. If there is no extensive laceration this may prove effectual, but if the tear extends beyond the cervix into the body of the uterus I am afraid nothing will save the woman except removal of the uterus, either by total extirpation—vaginal or abdominal—or amputation through the cervix. Stitching the cervix is useless if the tear extends into the body.

When the loss of blood has been very great it is necessary to get fluid of some kind quickly into the circulation to keep the heart going. Several methods can be adopted. The best fluid to use is salt and water, 1 dr. to the pint. A pint of this can be injected into the rectum, and it is usually quickly absorbed. If one has a trocar and canula the injection can be made into the areolar tissues of either axillæ or under either breast. The best method of all, however, is to transfuse the fluid directly into a vein. Boiled water should be used (100°), and the operation done with antiseptic precautions. In hospitals this operation can be done in a few minutes, but in private work it would not be so easy. The apparatus required is very simple, viz., a canula, piece of tubing, and a filler. You must be careful not to introduce any air. The quantity to be used must vary with the amount of blood which has been lost. In our first case a pint sufficed. The effect on the pulse was perceptible before many ounces had been introduced, and by the time the whole pint was in the pulse was full and strong. In the fatal cases 8 pints were used.

The preceeding table of fifty-one cases of placenta prævia include all those which have been treated in the hospital since 1881, together with the ones I have had at the West-End Branch and in private. I have classified them under two headings, complete and lateral. Under the heading of lateral are included those which are usually termed marginal as well as lateral ones. The records were not always explicit enough to enable one to decide the exact position of the placenta when it did not completely cover the os. By some authorities this classification is adopted, and it really suffices.

Twelve were complete and 39 lateral. Of the former, 2 mothers died and 10 were saved, while of the children, 5 were born alive (one case being twins) and 8 dead. Of the lateral, 3 mothers died and 36 were saved, while of the children, 15 were alive and 24 dead. The total number of mothers lost was 5, or slightly under 10 per cent; of children 32, about 61 per cent. It must be borne in mind that in at least two

cases the children were macerated, while in several they were too premature to live.

The presentations were as follows:—Cranial, 43; transverse, 3; breech, 2; hand, 1; leg and arm, 1; elbow, 1. The treatment adopted was—Podalic version, 36; bipolar version, 3; forceps, 4; traction on breech, 2; and 6 were born by natural efforts. The tampon was used nine times, but in many of these cases it was used more as a safeguard to prevent hæmorrhage while removing the patient to hospital than as a dilator. Barnes' bags were used nine times. Manual dilation was the principal method, combined with separation of the placenta when necessary. In a few cases rupture of the membrane was all that was required. Post-partum hæmorrhage occurred in six, one being secondary on twelfth, thirteenth, and fourteenth days.

The vast majority of the patients were multiparæ, but six of them were primiparæ. The youngest of them was 19, while the remaining five were what might be called elderly primiparæ, aged 28, 28, 30, 34, and 35 years. The youngest multipara was 19 (ii-para), and the oldest 45 (xiv-para). One had had placenta prævia once before, and another twice. The latter had also cardiac disease.

ACCIDENTAL HÆMORRHAGE.

The subject of accidental hæmorrhage is of greater importance than that of placenta prævia. With the exception of rupture of the uterus I know of no more fatal complication in labour than concealed accidental hæmorrhage. The onset is insidious, and assistance may not be obtained until it is too late. The want of an external manifestation of what is going on may even deceive the medical attendant.

I have, unfortunately, met with a considerable number of them. In the *Glasgow Medical Journal* for June, 1892, will be found notes of six cases which I read before the obstetrical section of the Medico-Chirurgical Society. I have also reported several other cases in connection with my work at the West-End Branch of the Hospital, and a very interesting case, complicated with an old pelvic abscess, will be found in the *British Medical Journal* shortly.

The following are four of the severest I have had to deal with in the hospital during this year:—

CASE I.—M. S., unmarried, æt. 21, i-para, admitted 13th April, 1897, recommended by Dr. Stewart. She gave a history

of recurring hæmorrhages for the last eight days. The first attack occurred without any pain while she was in bed. She stated that she had lost about two-thirds of a chamberpotful. She had not been over-exerting herself previously. Since then there had been some bleeding each day. Her last period had ended 24th August, 1896.

Patient was a strong looking girl, and was not at all anæmic. Her pulse was 88 and full. The height of the fundus indicated about a seven and a half months' pregnancy. The abdomen was not distended, and there were no stræ to be seen. The fœtal heart-sounds were heard distinctly below and to the right of the umbilicus. The head presented. The os admitted one finger. There was nothing felt suggestive of placenta prævia, although the history pointed strongly to it. She complained of slight irregular pains. There was no hæmorrhage.

On the night of the 14th she passed a few clots, and the liquor amnii began to ooze away. On the night of the 15th she was given 15 drops Battley's solution. Temperature was 100°. By the 16th the liquor amnii had nearly all drained away. The os admitted two fingers, but the cervix was still firm. The irregular pains were increasing in severity. A half grain morphia suppository was inserted. At 3.30 P.M. a live child was born naturally. It weighed 4 lb. 5 oz. The slight amount of liquor amnii which had remained in the uterus had a very offensive odour. A large clot was present under one side of the placenta. She was given a perchloride intra-uterine douche. Her temperature had been 99.4° in the morning, but by evening it was 103.4°. She said she felt quite well. She was given 10 grs. of quinine. Next day she had some diarrhœa, but after that she got on all right. Her child only lived a week although kept in the incubator.

CASE II.—Mrs. E., æt. 41, multipara. Admitted 27th August, 1897. This patient was sent in by an East-End medical man with a note saying she was suffering from placenta prævia.

The history given us was that she had begun to bleed about 4 A.M., and that this bleeding had continued more or less ever since. The only cause she could give was that she had done a heavy washing the day before. The doctor had seen her a few hours after the onset, and had plugged the vagina. He had removed the plug twice and re-plugged, so that the third plug was still in.

On admission at 4.15 P.M. she was perfectly blanched, her lips were of a bluish-white colour and absolutely bloodless.

The pulse was 120, and very soft. She was given some stimulant. I reached the hospital shortly afterwards. She was at once given a pint of saline solution by the rectum. The abdomen was distended, and the foetus could not be distinctly palpated. She continually complained of great pain in her belly. The os admitted two fingers, and no placenta could be felt. Champetier de Ribes' bag was inserted and partially filled. In a few minutes it was withdrawn and the os dilated manually until the hand passed. The membranes were ruptured and a foot brought down, and delivery of a premature dead child, which weighed $2\frac{1}{2}$ lb., quickly effected. The placenta, which was completely separated, and a very large quantity of clot were at once cleared out of the uterus. During this the uterus was actively compressed, and the patient was given ergotin and strychnine hypodermically. A creolin intra-uterine douche at the temperature of 115° was given. There was no bleeding after delivery. Another saline rectal injection was given, and also about half a pint of the same into the areolar tissue under the left breast. The pulse was barely perceptible after delivery. In spite of active stimulation she became very restless, with sighing breathing, and died in half an hour.

CASE III.—Mrs. H., multipara, æt. 37. This patient was seen at her home by the out-door house surgeon, Dr. Barker. She had lost a good deal of blood, but her condition was fairly good. The os admitted three fingers. He plugged the vagina, and brought her into hospital. The plug was removed as soon as she was admitted, and the os was found dilated sufficiently to admit the hand. Version was done at once by Dr. Webster, and the after-coming head was expelled by uterine action. The child, which was premature, and weighed 5 lb., was dead. The placenta had been detached for a considerable area at its lower part. She made a good recovery.

CASE IV.—Mrs. T., æt. 27, ii-para. This patient had been delivered by me on 1st October, 1896, of her first child by craniotomy. The cord was prolapsed and pulseless. Her pelvic measurements were as follows:—Interspinous, $10\frac{1}{4}$ inches; intercrystal, $10\frac{1}{2}$ inches; external conjugate, 7 inches; diagonal conjugate, $3\frac{7}{8}$ inches. The true conjugate would be about $3\frac{1}{4}$ inches.

According to instructions, she came back for induction when seven and a half months pregnant. She was admitted on 1st October, 1897. A bougie was passed into the uterus, and

the vagina plugged the evening of admission. The plugs were removed sixteen hours later. The os was the size of a shilling. During the next twenty-four hours not much progress was made. On the evening of the 3rd October I found the os would admit two fingers, and was fairly dilatable, so I determined to put in a Champetier de Ribes' bag and leave it in until the os dilated. The bag was easily introduced without giving chloroform, the patient lying on her left side. Warm carbolic lotion was pumped in through a Higginson syringe, and before the bag was nearly full the patient suddenly became blanched and the pulse grew very weak. The syringe was detached from the bag and the fluid allowed to run out, but only a little came through the tube, and it was blood-stained, but a gush of blood-stained fluid came from the vagina. The bag was withdrawn at once, when there was a tremendous gush of blood. The bag had a rent nearly an inch long in its side. As the uterus showed no indication of contracting, Dr. Black agreed that I ought to dilate manually and turn at once. This was easily effected, as the cervix yielded readily to my hand. The body was drawn down and the arms freed. The uterus was still very flabby, and I was afraid that internal bleeding might continue, so I delivered the head at once by suprapubic pressure combined with not very great traction on the body. The child was alive, and weighed 6½ lb. The placenta, which was partially in the vagina, was removed. It had been attached low down and was very soft, evidently fatty. A hot intra-uterine creolin douche (120°) was given, and the uterus, which had been very flabby, soon contracted firmly. A hypodermic injection of ergotin (3 grs.) and another of ether (20 drops) were given, and a pint of saline solution by the rectum. The cervix was torn considerably, but the hot douche seemed to check the hæmorrhage. The patient had rallied and said she felt better. Her pulse was 92, and of fair strength. She was then made comfortable, and a firm binder put on, but in about ten minutes, perhaps half an hour after delivery, her pulse became very feeble (120), and she looked decidedly blanched. Bleeding had recurred, evidently from the cervix, as the uterus was fairly firm. The foot of the bed was raised at once, and 2 oz. brandy and 2 oz. water injected into the rectum. Another hot douche (120°) was given by me, while, at the same time, Dr. Webster opened the median basilic vein and transfused 6 pints of saline fluid. The pulse improved for a time. As the hot douche failed to check the oozing, I plugged the cervix and vagina with iodoform gauze. Hot applications and stimulants were used

freely, but she gradually sank, and died two and a half hours after delivery.

We got permission for a *post-mortem*, but, unfortunately, the body was removed without the resident's knowledge before we could have the examination made.

I show you the bag and you see the tear in it. Two other of these bags have burst in my hands, but, fortunately, the others burst in the vagina. In this case the burst was high up, and the fluid separated the placenta, which was very friable and situated low down. The bag is a large one, and from the point which was in the os to the top it measures fully 4 inches. As it distended the membranes would be stripped off the uterine wall and be pushed up before it. The lower edge of the placenta may even have been slightly separated by the strain on the membranes before the bag burst. Of course that had nothing to do with the tearing of the cervix except that it forced me to deliver by *accouchement forcé*. If I had delayed the delivery of the head and sacrificed the child possibly, the mother would have been saved. One can always be wise after an event. This case has certainly taught me some very useful lessons in a way which I am not likely to forget.

Herman, in the last sentence in his book on *Difficult Labour*, in speaking about the danger of rupture of the uterus from the use of Champetier's bag, says that "no case has been recorded in which either this or any other bad effect has been produced by it." I am sorry to have to record a case which contradicts this.

This bag seems to be made of some preparation of rubber. The one I have for private use is made of silk, and sewed. I do not think it would burst, but it is very difficult to render such a bag aseptic. These rubber ones, I imagine, have been made so that they may be easily rendered aseptic. I shall certainly never use one of them again. The silk one I have found does well.

Etiology.—In the cases I have examined carefully, I have always found the placenta more or less degenerated. There has probably been endometritis present. A perfectly normal placenta might become detached as the result of a severe accident, but this is exceptional. The exciting cause may be a blow, over-exertion, over-stretching such as to reach something above the head or in hanging up clothes; shock, fright, severe vomiting, severe coughing, &c., have been given as causes. In some, as the first, there may be no apparent cause.

In the external variety the blood gradually makes its way down between the membranes and the uterine wall, until it appears at the external os. In the concealed variety the blood is stored in the uterus, which it distends enormously. This great distension of the uterus causes the woman very great pain of a continuous rending variety. A multipara usually complains of it being very different from any pain she ever felt in former labours. This is a symptom of the utmost importance. The other signs and symptoms are those of hæmorrhage and collapse.

Diagnosis.—The external variety may be mistaken for placenta prævia. If the os is not dilated you may have a difficulty in deciding, but usually the os will admit of the placenta being felt in the latter. A boggy feeling in the fornices will also indicate placenta prævia.

The concealed variety can usually be easily diagnosed by the collapsed condition of the patient, the great distension of the uterus, and the nature of the pain she complains of. Rupture of the uterus gives somewhat the same collapsed condition, but it occurs as a rule in the second stage of labour, and an examination of the patient would soon settle the diagnosis.

Treatment.—In the preface to Jellett's *Short Practice of Midwifery*, Smyly says:—"In the first two years of my mastership I treated all serious cases of accidental hæmorrhage by rupturing the membranes; and, if that did not prove effectual, delivery was effected by version and extraction or perforation. The results were so bad that I resorted to plugging in all cases of external accidental hæmorrhage in which the membranes were intact and labour pains absent or feeble—that is, in the great majority of cases—and with excellent results. The fear that an external would be converted into an internal hæmorrhage proved groundless." My experience has been different from that. The second case shows that this fear is not groundless. It began as an external form, and the plugging converted it into a concealed one.

Jellett strongly advocates the plug. He says:—"If the blood cannot escape, then it must cease flowing as soon as the cavity is full. There is no room for any considerable quantity of blood to escape into a healthy uterus occupied by an unruptured ovum. If a vessel rupture in such a case, and no blood escape through the os, the pressure in the uterus would rapidly become greater than the blood pressure, and the

hæmorrhage would cease. If, on the other hand, the uterus be unhealthy, and dilate before the blood pressure, then the amount of the hæmorrhage is only limited by the dilatability of the uterus." This is all true enough, but the unfortunate thing is that we rarely have to deal with a healthy uterus. If it were healthy the placenta would not separate except under very exceptional circumstances. The placenta in the cases which I have examined have all been in an unhealthy condition. Jellett says the hæmorrhage is primarily due to an endometritis. A uterus with endometritis is not a healthy one.

Nature's method of checking hæmorrhage is not by pressure, but by contraction and retraction of the uterine vascular fibres. The only way to get that is by emptying the uterus, a practice I have always carried out when any active hæmorrhage was going on. The only case I have lost was Case IV, and it was a very exceptional one. I am afraid I was too anxious to get a live child in that case, and it was of course complicated by a considerable contraction of the pelvis. Rupturing the membranes may suffice when active contractions are going on, but I would never trust to it if there had been much hæmorrhage. If hæmorrhage is going on, I think the best treatment is to dilate and deliver, with due precautions not to lacerate. If the hæmorrhage has ceased and the patient is not collapsed, we may wait and watch her as in the first case. If she is very much collapsed, we should stimulate her first before delivery, as the shock of the delivery may prove fatal even without any post-partum bleeding. The treatment of the external form is comparatively simple, but in the concealed we have a much more serious difficulty to face.

Jellett says:—"The only treatment which is of any avail in these cases is *accouchement forcé*, or Porro's operation." The former I have tried, and I must confess the results have not been encouraging. Rupturing the membranes has been recommended by some, but the escape of the liquor amnii would only make more room for hæmorrhage, as the uterus would not be able to contract. Porro's operation has been done with success, and I shall give it a trial if I am unfortunate enough to meet with another case in the hospital, where one can be prepared to do it on a minute's notice. Before doing a Porro or attempting to deliver by *accouchement forcé*, I shall first transfuse a pint or two of saline fluid, and repeat this if necessary afterwards.

I am indebted to the two residents, Drs. Webster and Barker, for the notes of some of these cases, and for assistance in searching the records of sixteen years' work in the hospital.

LARGE PULSATING VESSELS IN THE PHARYNX.

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Infirmary Dispensary, Glasgow.

SEVERAL writers have recently called attention to the occasional presence of large pulsating vessels on the posterior wall of the pharynx. As the condition is probably commoner than the number of reported cases would seem to imply, as it may be observed even while making a hasty examination of the

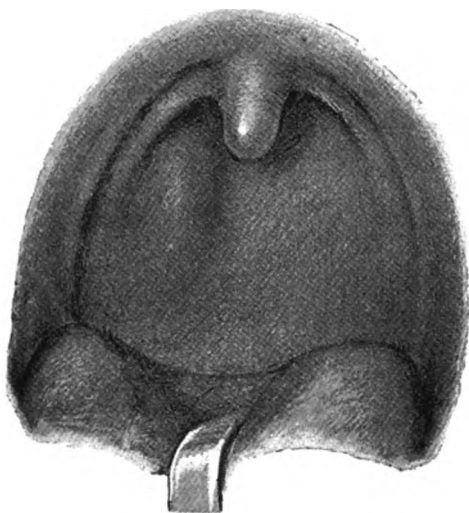


FIG. 1.

throat without special instruments, and as its non-recognition may have most serious consequences if operative measures are carried out in the neighbourhood, a brief reference to four cases that have come under my notice may not be out of place.

CASE I.—The patient, a man, aged 75, complained of indistinct speech. This was found to be due to the contraction of syphilitic cicatrices of the soft palate. In the course of the examination a large pulsating vessel (Fig. 1) was seen projecting from the angle between the posterior and right lateral

walls of the pharynx. It emerged from the posterior wall about the level of the upper border of the epiglottis, and ascended vertically, becoming gradually more prominent. When opposite the upper part of the tonsil, where its convexity was most marked and its pulsations best seen, it curved outwards and disappeared in the tissues at the side of the nasopharynx. It was fully as thick as a pencil and extended laterally over a considerable part of the posterior wall of the pharynx. The mucous membrane covering it was normal. Pressure over the large vessels on the right side of the neck, above the level of the upper border of the thyroid cartilage, checked the pulsation in the pharynx. Nothing abnormal was detected in the condition of the walls of the vessel, nor in those of the

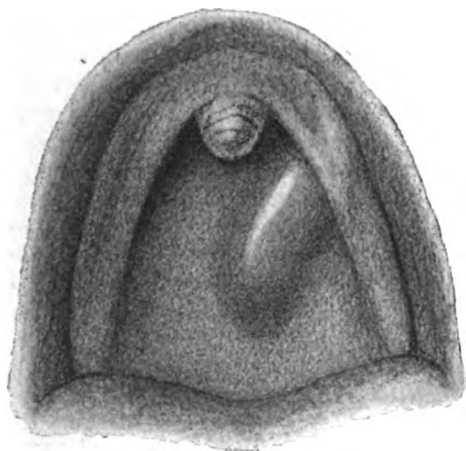


FIG. 2.

temporal or radial arteries. There were no symptoms that could be attributed to its presence. The appearances have remained unchanged during the nine months that have elapsed since his first visit.

CASE II.—Patient, a woman, aged 75, complained of deafness. A prominent vessel was found in her pharynx, somewhat smaller than that in the case just described, but otherwise the same as regards appearance and position. She had experienced no unusual sensations in the throat.

CASE III.—Patient, aged 72, had brought his son several times for treatment of a post-pharyngeal abscess. On one

occasion he asked to have his own throat examined, as he had slight difficulty in swallowing. A glance at his pharynx revealed a marked prominence on the posterior wall very similar to the condition that had existed in his son's throat; the fact that it pulsated, however, indicated its true nature. This large vessel (Fig. 2, p. 29) emerged from the left half of the posterior wall of the pharynx on a level with the attachment of the posterior pillar, and curved upwards and outwards, passing behind the upper part of the pillar. The best view of the vessel was obtained when the palate was drawn upwards (as shown in the figure). The mucous membrane covering the vessel was normal. The pulsations were most marked on its convex part. It caused no symptoms, the difficulty in swallowing, of which he complained, passing off in a few days.

CASE IV.—Patient, aged 22, complained of dryness in the throat and nasal obstruction. On examining her pharynx, very marked pulsation was seen behind both posterior faucial pillars. On the right side, the vessel had much the same appearance as in Case I, the shelving projection extending half way to the middle line. On the left side it was less prominent, but the pulsations were as pronounced, and could be traced along the lateral wall of the pharynx for about an inch. The pulsations were not perceptible to the patient.

In addition to those four cases, in which the vessel formed a marked prominence in the pharynx, I have several times observed pulsation of the lateral walls of the pharynx without bulging. Farlow¹ has reported a number of cases of this kind occurring almost exclusively in women, the majority of whom were young. In several patients the condition existed on both sides of the pharynx; occasionally it was associated with atrophic pharyngitis, which may have facilitated its discovery.

The cases on record in which the vessel projected into the pharynx are few. Barnes,² Baber,³ Sanderson,⁴ Foucher,⁵ and Sharp,⁶ each describe a case; Griffin⁷ and M'Bride⁸ report two

¹ *Boston Med. and Surg. Journ.*, 31st March, 1887, and 3rd July, 1890.

² *Lancet*, 1875, ii, p. 623.

³ *Brit. Med. Journ.*, 1887, i, p. 626.

⁴ *Brit. Med. Journ.*, 1887, ii, p. 625.

⁵ *L'Union Méd. du Canada*, 1896, p. 17.

⁶ *Journ. of Laryngol. Rhinol. and Otol.*, 1896, i, p. 318.

⁷ *Med. Record*, 1896, ii, p. 247.

⁸ *Edin. Med. Journ.*, December, 1896, p. 510.

respectively, while Schmidt¹ appears to have seen the condition not infrequently. From the reports of these cases, it is evident that this anomaly is found chiefly in the aged, especially in females, and that it gives rise to no subjective sensations in the throat. The appearance usually noted was that of a pulsating vessel, as thick as a pencil, running in a vertical direction behind the posterior pillar of the fauces. Barnes's case, however, resembled Case III above reported; while in one of M'Bride's patients, both posterior faucial pillars pulsated, and a large arterial trunk was felt passing across the posterior wall of the pharynx.

Pulsation of the lateral walls of the pharynx doubtlessly often escapes notice owing to its being masked by the involuntary movements of the posterior faucial pillars and adjacent parts accompanying respiration. This was found especially in the aged, the slow and feeble pulsation in Cases I and II being detected only by careful inspection.

All the writers mentioned above—excepting Schmidt—regard the vessel in question as an enlarged ascending pharyngeal artery, although a doubt is expressed by some as to whether it may not be an abnormal vertebral. Schmidt, on the other hand, maintains that in such cases we have to deal with the carotid.

In the four cases here reported, an aberrant vertebral is almost certainly excluded, for the pulsation in the pharynx can be checked by moderate pressure on the large vessels of the neck above the thyroid cartilage. In regard to the ascending pharyngeal, it seems highly improbable that so small a vessel could become dilated to such a degree without any discoverable cause, symptoms, or other circulatory disturbance; the dilatation of the arteries in the aged—of which Hutchinson relates some interesting examples that bear no resemblance, however, to the cases under discussion—does not explain the condition even if it were confined to such, and still less so when it is found occurring in young persons (Case IV).

As I was unable to determine by palpation which artery was involved, Dr. Parry kindly examined Cases I and IV. He reported that the pulsating vessel in the pharynx in both patients corresponded, without doubt, to the convexity of an abnormal bend of the internal carotid.

On seeking for confirmatory anatomical evidence, I find that a tortuous condition of the internal carotid has been repeatedly

¹ *Die Krankheiten der oberen Luftwege*, 2te. Aufl., 1897, p. 19.

32 MR. A. B. KELLY—*Large Pulsating Vessels in Pharynx.*
described. Dubrueil¹ mentions it, and states that one of the

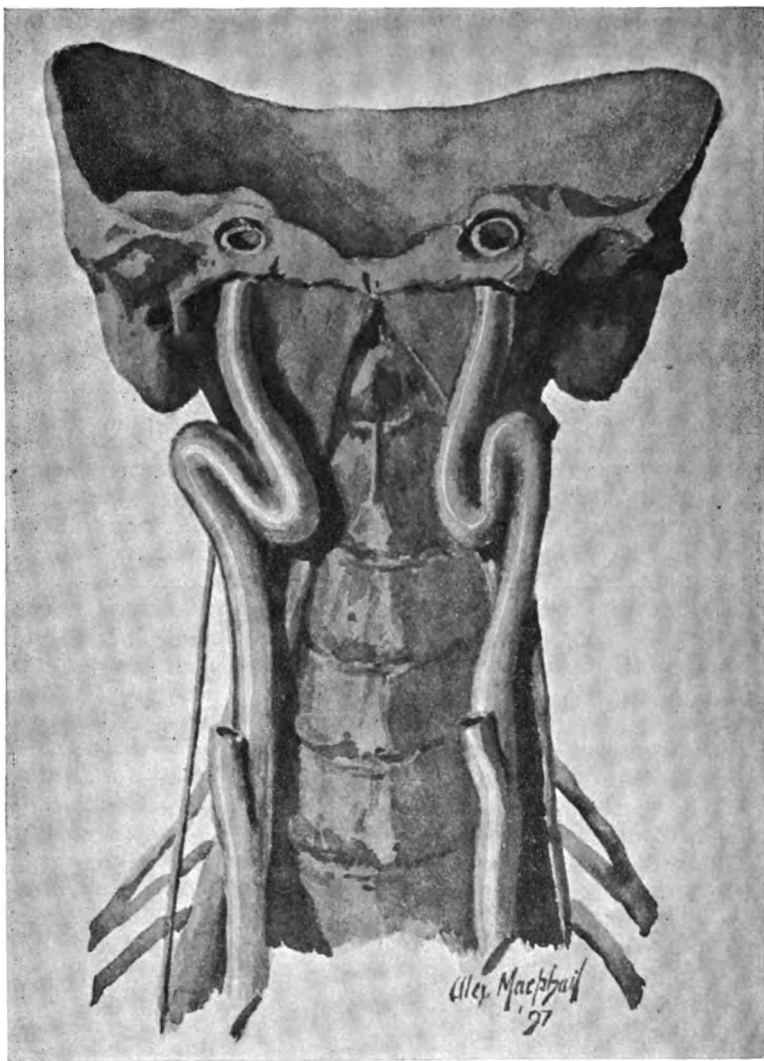


FIG. 3.

curves of the artery may approach the pharynx and tonsil.
Des anomalies arterielles, Paris, 1847, p. 93.

Barkow¹ describes and illustrates the appearance in four anatomical specimens presenting this abnormality. Three of these closely resemble a preparation to which I shall refer immediately; in the fourth, the tortuosity is less marked, the artery in the upper part of its course bending abruptly backwards, running horizontally for a short distance, and then curving upwards to the carotid canal.

The specimen above alluded to is in the Anatomical Museum of the University, and was brought under my notice by Dr. Macphail, who kindly sketched it (Fig. 3, p. 32). In this the internal carotids are tortuous, and as they are all but symmetrically so, the following description applies to both. Each artery ascends normally to within $2\frac{1}{2}$ inches of the carotid canal, when its course tends slightly outwards. After running thus for over an inch it turns abruptly inwards and downwards, being thus doubled upon itself, and descends for an inch. It then bends sharply forwards and upwards, and ascends with a slight inclination outwards to the carotid canal, a distance of 2 inches. In consequence of this tortuosity the artery approaches half an inch closer to the middle line than if it had followed the normal course.

It is evident that some, if not all, of the cases of "large pulsating vessels in the pharynx" are due to a tortuous condition of the internal carotids, for the prominent part of the lower bend in the specimen just described would produce an appearance in the living subject similar to that observed in Cases I, II, and IV.

The manner in which these tortuosities originate is doubtful. One could conceive of the persistence of certain portions of the embryonic aortic arches which are usually obliterated, and of the occlusion of others which normally remain patent, and thus evolve a developmental theory. Pulsating vessels in the pharynx have been observed chiefly in the aged, however, and anatomists have found tortuous internal carotids, as a rule, in old subjects; further, it is known that other arteries may become tortuous in advanced life, and that the common carotid may be so affected as even to simulate an aneurysm. In the absence of anatomical investigations—at least so far as I can find—indicating a possible embryonic origin, and with strong evidence that the condition is a change associated with advance in life, the latter view must, in the meantime, be regarded as the more tenable. As to what may be the immediate cause of

¹ *Die Verkrümmungen der Gefässe*, Breslau, 1869, p. xix; and *Comparative Morphologie des Menschen und der Menschenthlichen Thiere*, 5. Th. Breslau, 1866, Tab. VII.

the tortuosity, my cases afford no clue, and I can offer no suggestion.

The importance of detecting abnormal pulsation of the nature above described before performing tonsillotomy or incising a peritonsillar abscess is self-evident. A tortuous internal carotid may also be a source of danger in the removal of adenoid vegetations, and it is probable that such a condition existed in a recent fatal case of hæmorrhage following this operation, in which the *post-mortem* examination revealed a rupture of the internal carotid in the lateral wall of the nasopharynx.¹

CURRENT TOPICS.

COMPLIMENTARY DINNER TO DR. C. O. HAWTHORNE ON THE OCCASION OF HIS LEAVING GLASGOW.—On the evening of Friday, the 12th November, 1897, in the Windsor Hotel, St. Vincent Street, the members of the medical profession in Glasgow gave a farewell dinner to Dr. C. O. Hawthorne. About ninety gentlemen, representing all departments of the professional life of the city, sat down to dinner, with Professor W. T. Gairdner in the chair, and Dr. George S. Middleton acting as croupier. Dr. Wm. R. Jack, as secretary, intimated his receipt of a large number of letters of apology, many of which he read.

Professor Gairdner, in proposing the health of Dr. Hawthorne, said that the only thing that could be described as sad about the present meeting was that many of those present had a strong desire to have retained Dr. Hawthorne in Glasgow, and deeply regretted his departure. They had, in the course of the years he had been with them, been able to appreciate the worth and strength of his character, and the nature of his services both to the medical profession and to the Glasgow medical school. Speaking for himself, Dr. Gairdner added, he could say that, whether as a clinical observer and teacher or as a colleague, he regarded Dr. Hawthorne as one of the best men we have ever had, and a man sure to make his mark wherever he saw fit to follow his profession. The unflinching care and accuracy of his work was such as to convey assurance of nothing being left undone, and his personal popularity with

¹ Schmigelow, *Monatsschr. f. Ohrenheilk.*, 1897, p. 115.

the students, both of Gilmorehill and Queen Margaret College, was such as could only be attained by one who knew their needs, and had the art, in the highest degree, of conveying instruction over a wide field. No one who knew Dr. Hawthorne as well as he (Dr. Gairdner) did, could doubt for a moment of his future; and, therefore, it was that with some natural sorrow at losing him, but the utmost hope and confidence in his success, that they now bade him farewell. This meeting was to express to him their most hearty good wishes, and to give assurance, by the toast now to be proposed, of the entire sympathy of all his Glasgow friends in recommending him to the larger field of the Metropolis.

In reply, Dr. Hawthorne spoke as follows:—Professor Gairdner and Gentlemen, I occupy to-night by your favour a position which, according to no less an authority than Lord Rosebery, is calculated rather to foster a man's pride than to promote his happiness. I may well indeed be proud to be your guest, but just now I am acutely sensible of my inability to do justice to your kindness. For it is impossible that I should stand here, having listened to the far too favourable terms in which Professor Gairdner has spoken of myself and my work, and having witnessed the generous and cordial reception you have given to the toast which he has submitted, without realising how utterly inadequate are any words which I can command to thank you for so kindly an expression of your goodwill. I must be content to ask you to believe that I am not inappreciative of your kindness, and to accept the assurance that the recollection of this evening, and all that it means, will remain with me as one of the most grateful and valued of my memories. The rewards which come to a medical man are probably more varied than abundant, but certainly none can compete with the confidence and goodwill of his fellows; and because you have been good enough to offer me this tribute, I must, I realise, remain ever your debtor.

But it is now that the chronic puzzle of the after-dinner speaker—namely, what he shall say—is pressed upon me in a specially aggravated and complicated form. I may certainly not express myself as in exact agreement with what has fallen from the “previous speaker,” and still less may I put myself in an attitude of acute contradiction. To go up to Ramoth-Gilead is forbidden me; it is equally forbidden me to forbear. But there are other difficulties. The medical world of Glasgow is just now, I understand, alive with excitement, and that to such an extent as to render the position of

anyone addressing a professional audience one of extreme delicacy. Amidst the friends of a practically unanimous Senate, the supporters of a strictly united Board of Managers, and the adherents of a Faculty which by a beautiful example of impartiality has managed to confer its benediction upon both combatants, the most experienced speaker might reasonably feel anxious, and my modest powers may well therefore be excused from endeavouring to deal with the electric topic of the hour. I prefer rather to utilise the opportunity which you have given me to refer to certain events which, in consequence of the lapse of time, have now assumed their true historical perspective, and have for the most part passed beyond the domain of controversy.

Professor Gairdner has been good enough to suggest that I have some reason to feel not entirely dissatisfied with my work in Glasgow. He has certainly given me more credit than I deserve; but I am glad to think that my life among you has not been an altogether idle and useless one, and I certainly look back with some satisfaction on my association with certain movements which have taken definite form and shape since I first came here some seventeen years ago.

When I was a student at the University, and the same is true of many of yourselves, there was no University Union. Now there is a flourishing organisation in a well-equipped building. In my day the exhausted student was driven to seek for refreshment in a subterranean vault, where he struggled more or less successfully with various comestibles that might not infrequently have been readily mistaken for "the remnants of a paleozoic age." Now, as a member of the Union, the student may take out a ticket for a course of practical dining demonstrations, with the certainty that each one will offer him some substantial contribution to his welfare. Meetings of students in my recollection had to be held in a region spoken of vaguely as "down the town," or at times perchance, by the grace of the Senate, in a classroom which, so far as my experience goes, usually boasted a strong smell of forensic medicine. Now all this is changed, and the student enjoys the advantages and discipline of a well-ordered club, the supervision and regulation of which are practically in the hands of the students themselves. I believe this to be a great and valuable addition to the educational influence and opportunities of University life, and the recollection of my association with the establishment of the Union is an unqualified source of pleasure to me. But I refer to it principally for two reasons. In the first place I desire to embrace this

opportunity to render an act of justice to one whose services to the Union are not so generally known as they ought to be. I mean Professor Coats, whose return to his work in Glasgow in renewed vigour we all confidently and earnestly anticipate. I had the honour of serving on the first Union Committee with Dr. Coats, and of working with him in the establishment and management of the Union for the long period of ten years; on two occasions I was elected convener of the Union Committee, and I enjoyed the distinction of being the first vice-president of the the Union. It is therefore with a full knowledge of all the facts that I assert that, next to Dr. M'Intyre, of Odiham, whose generous gift of £5,000 made the Union possible, and next of course to the ladies whose efforts and presence carried the bazaar to so great a success—and Dr. Coats would, I am sure, be the first to insist on their precedence—the students of the University are indebted to the enthusiasm, patience, and tact manifested by Dr. Coats, for the benefits of the Union which they are now enjoying. One other purpose must be served by this reference. It is to remind you that every graduate may, by the payment of the small sum of three guineas, become a life member of the Union, and may thus enjoy the advantage of contributing to secure its stability and welfare. A word to the wise is sufficient, and I should not have dared to venture upon an exhortation had I not been able to support it by example.

I may be allowed to say a few words about Queen Margaret College, with the medical school of which I have been connected since its institution. And I wish to acknowledge both the generous confidence extended to the members of the staff by the founders of the medical school, and also the ability and earnestness of the students. My relationship with the College I count among the best and richest of my experiences; I part from it with real and with great regret, but with no diminution of my interest in its welfare, or of my desire to serve it in any capacity still open to me. The College, as you know, has for some years been a part of the University organisation. The policy which placed it in that position was probably, under the circumstances, and on the whole, a sound policy. But it has had its attendant disadvantages, for I fear that the institution, which was formerly the "one ewe lamb" of its own Council, has now not infrequently to play in the University organisation the part of Cinderella to the two proud sisters at Gilmorehill and the Western Infirmary. There is one reform in connection with the College I will here make bold to advocate. It is that the lady students be placed

in reference to examinations for degrees under exactly the same conditions as those which obtain in the case of men. Whether candidates for degrees should or should not be examined by their own teachers is a question possibly open to discussion, but it surely cannot be argued that the students of one College of the University should be examined by those who have trained them, while the students of the other College have to meet examiners who have taken no part in their education. Let there be one weight and one measure, and I am the more free to say this, now that by doing so, I cannot even be suspected of an endeavour to promote any personal interests or ambitions.

I should like to express my gratitude to the University for the training and opportunities I have enjoyed under her discipline and in her service. I am an Englishman, and one, too, who, "in spite of all temptations," prefers "to remain an Englishman." But, were I not an Englishman, I would wish to be a Scotsman, and I certainly envy the Scottish youth their educational opportunities. It is in this spirit I may be allowed to say, that, whatever changes may be made in your University system, there will always I trust remain open of attainment, even to the very humblest in the land, the highest academic distinctions and the best rewards of learning. I must, also, render a tribute of acknowledgment to many hundreds of students, in whose training I have been permitted to take some small share. I trust that, as a teacher, I have never done anything to cause any student to swerve from the path of hard and honest work as the only avenue to knowledge, or to lead him to take anything but an enlightened and elevated view of the responsibilities and opportunities of his profession. It is my privilege to have received from the Senate of the University a most generous recognition of the work I have been able to do, both in Queen Margaret College and, under Professor Gairdner, in the clinical school of the Western Infirmary.

If, gentlemen, as you would seem to indicate, you recognise that my work and influence in other departments have at least been in the right direction, I may well be gratified, for knowing you, I value your approval, and, after all, I am a Glasgow graduate, and I claim to be one of yourselves. It is in Glasgow that, medically speaking, I was born and bred; it is here that for many years I have enjoyed what I believe to be a special privilege of Glasgow men—the realisation of a medical career as an opportunity for self-culture and discipline—as an atmosphere in which a man may live—and for the exist-

ence of which we are so largely indebted to the sustained and elevated example and influence of our great teacher, Professor Gairdner; from Glasgow men and women I have received abundant and repeated kindnesses; and in this city I have formed friendships, the permanence of which is one of my most cherished convictions. Whatever separation, therefore, may be brought about by time and distance, it is impossible that either in interest, or aspiration, or goodwill, I can be separated from the medical life and welfare of this great city. There may be, there must be at times, individual failures and individual misfortunes, but I doubt not we are all prepared to meet our lot with "free hearts and free foreheads." Whate'er betide, we may still say to fortune—

"Smile and we smile, the lords of many lands;
Frown and we smile, the lords of our own hands;
For man is man and master of his fate."

Men may come, gentlemen, and men may go, but, knowing as I do, the opportunities for work which exist here, and knowing above all the men who are in the midst of you, it is with no hesitating voice I venture to proclaim that the name and fame of Glasgow must ever advance and extend. It is with the knowledge and appreciation of these facts—it is with a grateful recognition of the ties that unite us—that in all confidence, and most earnestly and sincerely, I join with you in saying—"Let Glasgow flourish."

MEDICAL APPOINTMENTS.—The following appointments have recently been made by the managers of the Western Infirmary:—Assistant Surgeon, Dr. Duncan Macartney; Dispensary Physician, Dr. W. R. Jack; Dispensary Surgeons, Dr. G. B. Buchanan and Dr. George H. Edington.

THE LARYNGOSCOPE: A MONTHLY JOURNAL DEVOTED TO DISEASES OF THE NOSE, THROAT, AND EAR.—This journal, which has been very successful in America, will, after January, 1898, be issued simultaneously in Great Britain and America. The European edition will be under the charge of Dr. StClair Thomson; and it is intended to give the journal a thoroughly comprehensive and cosmopolitan character. Each number will consist of sixty-four pages, and the subscription will be ten shillings per annum. The matter contained in the *Laryngoscope* is written in a way calculated to be of considerable interest to the general practitioner as well as to the specialist. A large part is devoted to original communications

on practical subjects, leading articles, and commentaries. Full epitomes are given of selected articles, and readers of the journal may therefore rely on finding complete details and descriptions of everything which is of interest, or which promises to be of value. The moderate price at which the journal is issued should commend it to a wide circle of readers.

MEETINGS OF SOCIETIES.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.

SESSION 1897-98.

MEETING I.—1ST OCTOBER, 1897.

The President, DR. G. S. MIDDLETON, in the Chair.

SOME OBSERVATIONS ON THE DIFFICULTIES OF DIAGNOSIS IN ABDOMINAL DISEASE, WITH BRIEF ACCOUNTS OF ILLUSTRATIVE CASES.

BY DR. MIDDLETON.

Dr. Middleton's paper appeared as an original article in our issue for November, 1897, at p. 321.

MEETING II.—5TH NOVEMBER, 1897.

The President, DR. G. S. MIDDLETON, in the Chair.

I.—CASES OF EXCISION OF MENINGO-ENCEPHALOCELE.

BY DR. NICOLL.

J. P., æt. 2 years, sent to me in August, 1896, by Dr. Gorman, of Rutherglen. The child, at that time æt. 10 months, had a pulsating sessile meningo-encephalocele measuring across 3 inches in one direction and $3\frac{1}{4}$ inches in the other, and situated in the middle line near the vertex. This I excised in September, 1896. The specimen here shows a meningeal sac

largely occupied by brain matter, the fluid having escaped. The child, as you see, fourteen months after operation, is in perfect health, and the aperture in the skull all but completely closed by bone.

L. F., æt. 1 year and 10 months, sent by Dr. Blakeley, of Kirkintilloch, in August, 1896. At that time the child, æt. 8 months, had a pulsating sessile meningo-encephalocele in the middle line below the posterior fontanelle, which measured 5 inches in circumference and $3\frac{1}{4}$ inches across. In August, 1896, I excised this. The specimen shows a meningeal sac partly occupied by brain matter, the fluid having escaped. The child, fourteen months after the operation, is in every way well, and, as you may see, the aperture in the skull is completely closed by bone.

In addition to these two cases of meningo-encephalocele, I have removed meningoceles or encephalocèles from four cases. Of these I hope to show several, if not all, to the Society at a future meeting.

The method of operating in all has been as follows:—By an elliptical incision, skin flaps are shaped and raised from the base. The base—or neck where the sac is pedunculated—is isolated, and then divided in such a way as to leave flaps of dura mater to cover the stump. The stump of brain matter is then divided, bleeding arrested, and the dura mater sutured. From the bony margins of the skull aperture, small portions of bone are separated by chisel or knife, and turned over on to the sutured dura mater. The skin flaps are then sutured.

This bone grafting secures, what these cases show, more or less perfect closure of the skull. The longitudinal sinus may give trouble. In the first case shown I had difficulty in avoiding it, and in a case which I hope to show the Society, I had to divide it.

II.—CASES OF SPINA BIFIDA TREATED BY OPEN OPERATION.

BY DR. NICOLL.

It is not my purpose to-night to submit statistics on the comparative merits of open operation and injection. I have now treated a number of cases by open operation. Some of these I have already shown here and in other societies. To make the comparison of value, however, one must wait till the cases have been under observation for a considerable time, and I, therefore, do not yet submit a tabulated statement. From

such experience as I have had, however, it appears to me that there can be no doubt whatever as to the absolute superiority of open operation over injection, both in the matter of mortality and as regards prospect of cure locally.

B. S., æt. 3 years, sent to me two years and three months ago by Dr. A. Sloan. The child had then a spina bifida in the lumbar region of the size of a small orange. At that date I excised the greater part of the sac after opening it, and dissecting off its interior several cords of nervous tissue, which I returned into the spinal canal.

The child, as you may see, is, two years and two months after operation, in perfect health, and the gap in the spinal canal firmly closed by what feels like tough fibrous tissue under a sound skin scar.

Baby H., æt. 2 years, was operated on by me at the Children's Hospital in July, 1896. At that time the child, æt. 8 months, had a spina bifida in the lower cervical region of the size of a hen's egg. This I excised, and it forms the specimen I have here.

The child was to have been here to-night, but unfortunately it has developed whooping-cough. I hope, however, to show it at a future meeting of the Society.

Specimen from the case of the child of a doctor in the West of Scotland. The patient had a spina bifida in the lower dorsal region which measured across the summit $7\frac{1}{4}$ inches by $6\frac{1}{2}$ inches. This I excised in February, 1896. The child, now æt. 2 years and 7 months, is, one year and eight months after operation, in perfect health, the spinal gap being firmly closed by fibrous tissue and sound skin.

The specimen, as you may see, includes the greater part of the sac, with the ellipse of skin removed over the summit. A number of cords of nervous tissue were dissected from the interior of the sac and placed in the spinal canal.

In none of these cases is there any paralysis of legs, bladder, or bowel.

Method of operating in cases where there is much nerve tissue present.—In two cases operated on during the past six months (one of which, possibly both, I hope at a future meeting to show the Society), where nerve cords were large and numerous, I adopted the following plan in dealing with the sac:—

The operation in its early stages proceeded on the usual

lines—(a) flaps of skin; (b) flaps of mesoblastic tissues (ligaments, fasciæ, and muscles; (c) isolation of the neck, or base, of the sac; (d) opening of the sac and inspection of interior. After that, in place of dissecting the nerve cords off the interior of the sac, with the risk of damage to them and subsequent paralysis, I simply cut the sac into ribbons by incisions running parallel with, and between, the nervous cords. The emptied and slashed sac was then placed in the spinal canal, the mesoblastic flaps sutured over it, and finally the skin flaps sutured over all.

In looking into the literature of the subject I find that Mayo Robson, of Leeds, makes reference to having in several cases *excised portions* of the sac which lay between nerve elements. In the writings of several authors also, particularly, so far as I have seen, of those of the French school, the mesoblastic flaps are said to contain the elements of bone—derived from the rudimentary and undeveloped bases of the laminae. In no case on which I have as yet operated have I been able to find or include such bony elements in the flaps; nor in any of my cases has bone developed in the flaps, even after the lapse of several years. The case of B. S. shown to-night, two years and two months after operation, illustrates this, as well as cases I have formerly shown.

Dr. T. K. Dalziel, after congratulating *Dr. Nicoll* on his results, in which he had had a success certainly not to be anticipated ten years ago, stated that he believed with *Dr. Nicoll* that the open method was the safest and the most scientific. He asked what amount of nerve strands was present in the case of spina bifida (to which *Dr. Nicoll* replied that one or two small strands were found; these were dissected and dropped back). He thought *Dr. Nicoll's* later method preferable to attempted dissection. He himself had not employed it, but had sometimes, after puncturing it, dropped back the whole sac.

Mr. H. E. Clark said that, whether treated by injection or left to nature, many of these cases were quite hopeless, and bound to terminate fatally. Morton's method was sometimes successful, but very often it was not so. In the open operation one could distinguish between nerve strands and other tissues. The case of spina bifida shown was not perfectly satisfactory, as cases seated low down often underwent spontaneous cure. He had experienced difficulty in those cases where the skin was very much thinned and inseparable from the wall of the sac, so that flaps could not be formed.

He was struck with the cases of encephalocele, one in particular being seated farther forward than is usual. He noted that brain matter as well as membrane had been removed, which encouraged one to more active measures in connection with the removal of cerebral tumours. He asked what Dr. Nicoll would do in the difficult cases to which he had referred.

Dr. Nicoll said that he recalled two operations by injection done in the Western Infirmary on the same day some years ago. One died on the table; the other ten minutes after removal. In reply to an observation of Mr. Clark's, he stated that no bony formation had taken place in his cases of spina bifida, although he had been careful to raise mesoblastic flaps, according to the French teaching. In the different cases of spina bifida to which Mr. Clark had referred, he took away the skin along with the dome of the sac. The encephalocele mentioned by Mr. Clark was seated very far forward, and he had found it difficult to get it clear of the longitudinal sinus.

III.—CASE OF LIGATURE OF A CEREBRAL ARTERY.

BY DR. NICOLL.

Mrs. S., æt. 62, was sent into the Western Infirmary by Dr. Bell Todd on 9th October, 1896.

History (as obtained from her two sons, her daughter, and a neighbour).—Always excitable, and latterly much addicted to drink. One month previously had suddenly in her house turned giddy and, after staggering for a few minutes, fallen unconscious. Was thought to be drunk, and was placed in bed. For several days, however, remained more or less unconscious. Then gradually recovered, but for three weeks was in a dazed and stupid condition, and "could not talk properly" (aphasia?). After that appeared quite well for a week.

Four days before admittance, while going out, she again suddenly turned giddy, and was found by a neighbour leaning against the wall of the entry. She was with difficulty got into her house and put to bed—by that time nearly unconscious. For three days remained more or less unconscious, and on the fourth day an acute epileptiform seizure occurred very suddenly.

Dr. Bell Todd, who was hastily summoned, recognised the condition as one requiring immediate operation, and sent her at once into the Infirmary. Being on duty at the time

in Professor Macewen's wards, I happened to see her on admittance.

Her condition was as follows:—Unconscious, but could be partially roused. Pupils equal, moderately dilated, and sluggish in reaction. No optic neuritis. At intervals of a few minutes there occurred violent epileptiform seizures. Each seizure began with a turning of the eyes and head to the right, followed by twitching of the right side of the head and neck. This was almost at once followed by violent twitching of the right arm and of the right lower limb. During the most severe seizures the left side of the body also became involved.

The head was shaved, and the patient was prepared for operation, which took place about an hour and a quarter after admittance.

Over the motor area I removed successive portions of the skull to the extent of about 5 square inches in all. A large clot lay on the surface of the brain, and there was also smart fresh hæmorrhage from the lower and anterior part of the exposed area. After removing the clot I tied the middle meningeal in the dura mater. The hæmorrhage still continuing I removed a further portion of bone in the direction from which it proceeded, and exposed a cavity in the cerebral cortex of about the size of a pigeon's egg. This was lined by greyish shreddy material resembling partially bleached old blood-clot. From the lower side of this cavity an artery was spouting across the cavity. This I tied with a fine ligature.

All the bone removed was replaced with the exception of the part immediately over the cavity. The wound healed rapidly, the bone uniting firmly. For several weeks she remained stupid and irritable, and markedly aphasic. She ultimately was dismissed well.

At present she is well in every way except in so far as that there is a gap in the skull of about 1 inch square, and near it an area of skull, corresponding with that removed in the operation, which is irregular and flattened.

During the past year she has been deserted by her family, and has been drinking and working as a charwoman by turns. Most unfortunately she has spent the past two days in a state of intoxication; and when, after tracing her through two model lodging-houses, I found her to-day, she absolutely declined to implement her promise and appear here to-night.

Remarks.—The artery tied appeared to be the ascending frontal branch of the middle cerebral. As to the nature of the

cavity into which it was bleeding, it seems an open question whether (a) it may have been an aneurysm which partially ruptured on the occasion of her first attack of giddiness, and finally ruptured a month later, or (b) was produced by tearing of the brain by hæmorrhage from the ruptured artery. In either case the shreddy material on its walls appeared of much earlier date than the large clot on the brain surface, suggesting a date of origin probably contemporaneous with the date of the attack of giddiness one month before admittance. The large soft black clot on the brain surface, on the other hand, seemed of recent origin, and in all likelihood originated at the time of the second attack of giddiness four days before admittance. Whatever the exact explanation, the rupture would seem to have been spontaneous. No evidence of fracture could be found, nor did the shaven scalp reveal any bruising. The history also bears out this opinion.

Dr. Newman asked if the artery was atheromatous, *Mr. Clark* if the bone had been removed by trephine, and *Dr. Middleton* whether there was anything to show that the cavity contained old clot, such as the presence of blood crystals. *Dr. Newman* added that it was difficult to say what was the nature of the lower clot. He asked if there were no indication of syphilis, aneurysm, or atheroma in the exposed vessels.

Dr. Todd had seen the patient in the first emergency, and sent her into the Western Infirmary. She then had epileptiform fits at intervals of about twenty minutes.

Dr. Nicoll, in reply, stated that he had found no evidence of syphilis, aneurysm, or atheroma.

IV.—TWO CASES OF RESECTION OF MEDIAN NERVE FOR FALSE NEUROMA.

By *Dr. Nicoll*.

L. C., æt. 9, sent to me by *Dr. J. Wylie Nicol*. In July, 1896, the patient fell and cut her right wrist on a piece of glass. The wound healed readily. During the autumn months of 1896, however, her mother noticed that she frequently dropped things held in the right hand, and in December her teacher sent her home from school with the report that she could not hold her pen. In January she came into *Dr. Nicol's* hands, and was by him kindly sent to me as an interesting case requiring operation.

At that time there was a keloid punctured scar of about $1\frac{1}{4}$ inch situated transversely just above the annular ligament. There was complete anæsthesia in the whole median area in the hand. There was some muscular atrophy in the thenar eminence. The index and middle fingers were covered with recurrent bullæ with serous contents, and there was marked atrophy of the pulp of the index finger. In March I cut down and dissected the nerve free from the surrounding scar. It presented a dense swelling of irregular shape, pigmented blue, and of the size of a horse-bean.

No improvement followed, and, therefore, nine weeks later, I resected $1\frac{1}{4}$ inch of the nerve, including the neuroma, and sutured the ends.

The specimen is the portion excised. The neuroma is purely fibrous tissue, and the pigmentation is due to particles of dirt with which the nerve had been tattooed at the time of the injury.

At this date, five months after resection, *sensation* is perfect, and the atrophy of the pulp of the index finger has completely disappeared. The *muscular atrophy*, however, has as yet improved but little despite the constant use of battery and massage.

J. H., æt. 39, sent to me in August, 1896, by Dr. Macdonald, of Kilmarnock. In May, 1896, he had wounded himself with a chisel just above the annular ligament of the left wrist. The wound healed well, but after the dressings were dispensed with he discovered anæsthesia of the forefinger. Shortly after this he for the first time consulted Dr. Macdonald, who sent him to me.

His condition at that time was as follows:—Anæsthesia, apparently complete, of the whole median area in the hand; bullæ on index and middle fingers; marked atrophy of thenar muscles.

On 16th August I exposed the nerve, and found a small dense fibrous mass in which the trunk lost itself and became indefinable. This fibrous mass was not very clearly demarcated from the surrounding scar in the tissues. Having dissected it clear, I removed it by dividing the trunk above and below and suturing the ends.

The specimen measures $1\frac{1}{2}$ inch. The patient healed by primary intention. *Sensation*, which began to return during the second week, was soon perfect, and *muscular atrophy* gradually disappeared.

At present the muscles are in perfect condition, there are

no bullæ on the fingers, and sensation is fairly good. During the past two months, however, sensation has slightly but perceptibly deteriorated.

Remarks.—These two cases form a contrast illustrating the striking lack of uniformity frequently observed in the results of operations for the restoration of nerve function. The cases were almost identical, and the treatment similar, yet in the one there is early and apparently permanent perfect restoration of sensory and trophic functions, while motor function is restored very slowly and but imperfectly, and in the other motor, sensory and trophic functions are rapidly and completely restored, and remain perfect for nearly a year, when sensation shows evidence of distinct deterioration.

Many factors contribute to this lack of certainty in result. Certain of these—viz., the nature of the affection which produced the loss of function, the time which has elapsed between the loss of function and the operation, the mode of healing of the operation wound, the condition of the scar left, and the treatment applied to the muscles—are well enough known, and need not be here discussed.

Dr. Kennedy said that the results of resection depended on the time elapsing between the accident and the operation. In the first case there had been a year's interval, and after so long a time there was no hope of restoring the muscles, although sensation should return very soon if the wound remained aseptic. The second case was unusual, the muscular power being re-established, and sensation disappearing for a second time after its re-establishment. He thought this was due to the contraction of the cicatrix giving rise to pressure on the nerve.

Mr. Clark emphasised the necessity of suture of the nerve at the time of the injury. This was often neglected, so that healing took place with impaired function of the nerve. It should be possible to suture either the median or ulnar nerve, if completely, or even if incompletely, cut across. In the case of the hand it was especially necessary to secure primary suture both of nerves and tendons, as secondary resection and suture were always followed by a certain amount of failure. In *Dr. Nicoll's* second case there was tenderness over the palm of the hand, probably due to a secondary neuritis, which might account for the recurring loss of sensation.

V.—CASES OF EXCISION OF THE APPENDIX.

BY DR. NICOLL.

Cases of excision of the vermiform appendix are now comparatively common, and it almost requires an apology on the part of a surgeon who brings such cases before the Society. While this is so, there are certain points, both in diagnosis and treatment, on which the records of cases as they occur may be expected to shed fuller light.

The following are the briefest notes of some cases which have passed through my hands during the last six months, the specimens from which I have here:—

CASE I.—Mrs. L., æt. 40, seen in consultation with Dr. Provan on 18th June, at that time between four and five months pregnant. Had been ill for two weeks with the usual symptoms of acute appendicitis—temperature, 103°; acute abdominal pain, chiefly in cæcal region; abdomen hard, with fulness and acute tenderness in cæcal region; rigors, vomiting, constipation, emaciation, and copious sweating.

Patient was on that day conveyed in an ambulance car to the M'Alpine Home. Enemata and milk diet for two days relieved the patient greatly, and the temperature sank to normal. The fulness and tenderness in the cæcal region remained.

Five days after first seeing the patient I operated, and found an abscess containing about an ounce of pus surrounding an appendix with an ulcerated perforation. The abscess was emptied, and the appendix, which forms the specimen, excised.

The patient made a perfect recovery, and Dr. Provan is now in daily expectation of her confinement.

CASE II.—Miss F., æt. 19, seen in consultation with Drs. West and Hanson on 15th July. Patient had been ill for two weeks with somewhat vague symptoms of acute abdominal mischief, but had for a few days presented evidence of abscess developing in the cæcal region.

On that day she was removed to the M'Alpine Home. For two days enemata and milk diet were given, and the temperature fell from 103° to 99·5°.

Four days after admittance I operated, and found a partially gangrenous appendix enclosed in an abscess cavity of irregular shape, very thick walls, and with thin fœtid pus. The proximal part of the excised appendix forms the specimen.

The distal part was blackish-grey, soft and gangrenous, and adherent to the wall of the colon just above the caput cæcum. This gangrenous part I picked off the wall of the colon in small pieces. The abscess cavity was packed with gauze, and the parietal wound partially sutured.

For a week the patient did only fairly well, the pulse being rapid and sickness recurring nearly every day. On the eighth day after operation the packing was (for the third time) removed, and was found soaked with fæces which, after withdrawal of the packing, continued to flow from the wound. The cavity was packed with gauze moistened with carbolic solution. On the following day I removed all sutures, opened up the cavity, and found a perforation of the colon at the former site of adhesion of the gangrenous appendix. This I closed by two rows of Lembert suture, and again packed the cavity.

The patient made a perfect recovery, and is now well.

CASE III.—Miss H., æt. 22, seen on 6th August in consultation with Dr. Hanson, with temperature of 104° , and all the local symptoms of acute appendicitis.

The following day I operated, and found the appendix free from abscess, adhesions, or perforation. It was of bright red colour, rough on the surface from exudation, and tumid and tense, thus contrasting strongly with the bluish, shining, soft neighbouring coils of intestine. I excised it, and it forms the specimen. Its walls are thick from inflammatory exudation.

The patient made a rapid and complete recovery.

CASE IV.—Master C., æt. 15, seen in consultation with Dr. Edward M'Millan on 10th March, suffering from symptoms of subacute appendicitis. The temperature was 100.5° , and local resistance and tenderness were considerable. He had had at least two similar attacks previously.

On 30th April, in the Crosshill Nursing Home, I operated. The appendix was more or less cyst-like, being constricted towards its base. It was redder than the neighbouring intestine, and was embedded in soft adhesions. It was excised, and the patient made a rapid recovery. The specimen shows thickening of the walls by inflammatory exudation and dilatation of the distal parts by mucous contents, produced by a stricture of the lumen about half an inch from the junction of the cæcum.

Remarks.—The facts of these cases illustrate the great

difficulty in deciding whether a given case be perforative, and therefore urgently requiring operative interference within at most a few days, or simply "catarrhal" or obstructive, and to be left as such with comparative safety permanently or for a time. Case III, for instance, had when seen a higher temperature and more acute symptoms than Cases I and II, though these were perforative and suppurative, while Case III was merely catarrhal.

Cases I and II also, under milk diet and enemata, improved so much as to make perforation seem improbable; and yet, when operated on, they present not only perforation but abscess. The same thing has been noted in cases previously brought before the Society by myself and others.

Case II illustrates what Treves and others have observed—that perforation of the cæcum and colon may, and does, result from *within* from dysenteric, catarrhal, tubercular, or malignant ulceration, but that it may also occur from *without* by the ulceration produced by the presence of a diseased appendix or the abscess resulting.

In Case I the right ovary formed part of the abscess wall. Its presence in that situation was revealed by the fact that protruding from its surface were two small cysts of the size of horse-beans. The ovary itself was, like the other parts of the abscess wall, covered by adherent fibrino-purulent material. These two small cysts were, on the other hand, quite free from all such coverings, and projected into the abscess cavity as glistening, tense, grape-like bodies.

CASE V.—Mr. B., æt. 38, had had for five months more or less pain in the right side of the abdomen and right groin, which at times became so severe as to lay him up for one or two days. In June, 1897, his right kidney had been exposed and explored for stone through a lumbar incision by another surgeon. In September he consulted me with symptoms of pain and tenderness in the cæcal region, which at times became acute and was accompanied by sickness and feverishness. The urine was normal. No enlargement of the kidney could be detected, but on bimanual examination *per rectum* a distinct mass could be felt in the neighbourhood of M'Burney's point.

On 19th September I operated and removed the appendix, which forms the specimen. It is notable for its very large size, forming, when removed, a cystic structure of ovoid shape, $5\frac{1}{2}$ inches in length and 3 inches in circumference. Its contents were fæcal-stained mucus, and the neck presents a

lumen too fine to admit an ordinary surgical probe. When exposed it presented evidence of inflammation, being red, and roughened, and partially enclosed in soft adhesions.

The patient has made a perfect recovery from the operation, and is quite free from pain.

In connection with this case may be placed the two following:—

CASE VI.—Mr. S., patient of Dr. Peden, consulted me a month ago with these symptoms of a years' duration:—Pain in right lumbar and iliac regions, extending into groin and scrotum. This is more or less constant, but at times becomes severe and accompanied by tendency to sickness. The urine contains a small quantity of albumen and a considerable amount of pus. No enlargement of the kidney can be detected, but there is tenderness in the renal region. The case is probably one of pyelitis of right kidney, and the patient is to return in a few weeks for cystoscopic inspection of the ureteral orifices and probably subsequent nephrotomy.

The case is mentioned here on account of the fact that his symptoms led, five months ago, to the removal of his appendix by a surgeon whom he consulted.

CASE VII.—Mr. G. was seen by me, in consultation with Dr. G. Marshall, on 25th January, 1896. The previous evening he had taken a dose of laxative medicine. In the morning he felt sick and suffered from gripes, but had no motion. On reaching his office he had a severe attack of abdominal pain, which ended in faintness. During the forenoon he had several attempts at evacuation of the bowel, but without effect. In the afternoon he took a cab home and sent for Dr. Marshall.

When, at Dr. Marshall's request, I saw him late in the evening his temperature was 100°, and his pulse rapid but good. There was little tendency to sickness. The whole abdomen was distended and painful. The pain was most marked, however, in the right iliac region, where there was resistance and great tenderness on palpation over M'Burney's point. Large enemata had no effect, but opium relieved his pain.

The following day the general abdominal pain was less, but the local resistance and tenderness in the region of the appendix greater. Further enemata moved the bowels freely, and on the night of that day he felt better, the temperature was normal, and the local tenderness no greater. On the next day, in the morning he felt still better, and the local

tenderness was diminishing. The urine to the naked eye appeared normal.

On the evening of the third day of his illness he passed the small uric acid calculus which forms the specimen, and gradually regained his normal healthy condition. At no time had he had any symptoms of urinary disturbance.

Remarks.—These three cases illustrate a difficulty in diagnosis by no means uncommon. Case V presented symptoms, caused by serious disease in the appendix, which led a competent surgeon to explore the right kidney for stone. Case VI presented symptoms which appear very clearly due to renal or urethral disease, but which led a competent surgeon to remove the appendix. Case VII presented symptoms, caused by urethral calculus, which might very well have led to the diagnosis and treatment of appendicitis.

VI.—COMPLETE ATROPHY OF THE DELTOID, WITH VICARIOUS RESTORATION OF FUNCTION.

BY DR. R. KENNEDY.

The patient, a man, aged 22 years, presented complete atrophy of the right deltoid, the result of injury to the circumflex nerve from subcoracoid dislocation of the shoulder-joint two and a half years previously. Eleven months elapsed after the dislocation before he was able to elevate his arm at the shoulder-joint to any appreciable degree. At the end of that time he was able to return to his work, and from that time, probably from the regular exercise secured at his work, the range of movement and power at the shoulder-joint rapidly improved, and now only careful inspection detects any abnormality.

At present the atrophy of the right deltoid is complete. There is no response to electrical stimuli; the acromion, coracoid, and head of the humerus are all prominent, and felt to be covered merely by skin and subcutaneous tissue; and there is no contraction of muscular tissue in the region of the deltoid when the patient raises his arm. Despite this condition, the patient can elevate his right arm as easily and completely as his left. Nearly all the movements performed by the deltoid are restored, but there are one or two, such as that performed in throwing a stone, which are defective.

The vicarious factors supplying the function of the deltoid are three in number:—

1. Hypertrophy of the supraspinatus. This is shown by a

a striking tension and bulging over the supraspinous fossa during elevation of the arm. The extent to which this muscle elevates the arm was ascertained, by taking angular measurements between the scapula and arm, to be 30° .

2. Muscles rotating the scapula. This accounts for a considerable extent of the restoration of function. In complete elevation of the arm, the inferior angle of the scapula is in front of the lateral line, and the bone is placed almost horizontally. On the sound side during elevation of the arm to the maximum the inferior angle of the scapula travels through a distance of $2\frac{1}{2}$ in., while on the affected side the distance travelled is $4\frac{1}{2}$ in. This extreme rotation of the scapula is effected by the cervical portion of the trapezius and by the lower slips of the serratus magnus. Both are greatly hypertrophied, the former standing out in contraction as a bulky mass.

3. Torsion and curvature of the vertebral column. The application of the two former factors raises the arm almost, but not quite, to the normal height; but the arm is capable of being raised to the normal height, and this is effected by a slight torsion of the vertebral column to the right and lateral curvature to the left.

VII.—COMBINATION STETHOSCOPE.

By DR. JONES.

Dr. Jones showed a combination stethoscope of his design, consisting of stethoscope, reflecting mirror, and ear speculum.

OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

SESSION 1897-98.

MEETING I.—27TH OCTOBER, 1897.

The Junior Vice-President, DR. ALEX. MILLER, in the Chair.

I.—ELECTION OF OFFICE-BEARERS.

The following office-bearers were elected for the ensuing session:—*Hon. President*, Prof. A. R. Simpson; *President*, Dr. Malcolm Black; *Vice-Presidents*, Drs. Miller and Oliphant;

Treasurer, Dr. Lindsay; Secretary, Dr. Jardine; Reporting Secretary, Dr. A. W. Russell; Pathologist, Dr. Munro Kerr; Members of Council, Drs. Reid, Alice M'Laren, Richmond, Balfour Marshall, Edgar, and Thomson.

II.—SPECIMENS.

A. BY DR. JARDINE.

Dr. Jardine showed a pen and ink sketch and a skiagram of the right arm of a month old female child. The hand was set



at an acute angle to the fore-arm, and the thumb was absent. The skiagram showed that the radius was absent as well as the bones of the thumb. The child had also a deformity of

the left ear, the pinna of which was smaller than that of the right, and was bent down over the external meatus. There was also a small meningocele in the occipital region. The child, a first one, was small, but healthy.

B. BY DR. J. K. KELLY

1. *Pelvic organs and sections of lung from a case of deciduoma malignum.*—This case will be published in detail in a future number of the *Journal*.

2. *Left ovarian cyst growing into ligamentum latum, and right ovarian cyst growing free.*—Both removed from a case of a woman pregnant about two months. Operation done under the diagnosis of extra-uterine pregnancy of left side. (On 1st November this patient aborted.)

3. *Left tubo-ovarian cyst which formed a tumour reaching above umbilicus, and right ovarian cyst.*—Both removed from same patient. Diagnosis: ovarian cystoma.

C. BY DR. EDGAR.

1. *Incomplete tubal abortion—Expulsion of complete decidual cast—Salpingo-oöphorectomy.*—Mrs. S., æt. 27, was admitted into the Samaritan Hospital on 20th October, 1897, complaining of a bearing-down feeling and colicky pains of five or six weeks' duration. Married for two and a half years, she has had one child, born at full term, fifteen months ago. Labour was easy, and she made a good recovery. Seven months after the confinement, while nursing her child, menstruation set in. It was of the usual twenty-eight day type; and each period, just as before marriage, lasted seven days, was of the normal quantity, and was unaccompanied with clots or pains. Her last ordinary period was in August. On 14th September, at her usual time, there was simply a slight stain on her napkin, and then there was no appearance of any blood till three weeks later—viz., 7th October—when what seemed to be an ordinary period occurred and lasted the usual time—seven days. It was not profuse; but, on the third day, a membranous cast of the uterus was expelled.

Prior to the scanty discharge in September, patient was perfectly well except for slight sickness; but thereafter she complained of a bearing-down feeling, and of colicky pains in the right iliac region, and the sickness continued. At no time was there any symptom of collapse, and though more debilitated and anæmic than previously, she was, nevertheless, able to perform her usual household duties.

On admission on 20th October, patient stated that there had been no recurrence of the hæmorrhage, but that the bearing-down and the colicky pains still continued. Cross-examination elicited the fact that these pains were not severe, that they were intermittent like labour-pains, and that the attacks came on once or twice daily, lasting a half to one hour at a time. Defæcation was painful, and micturition at times difficult. On examination, the os was found to be slightly patent and the cervix somewhat softened, while the uterus, which was of little more than normal size, the sound passing $2\frac{1}{2}$ inches, was pushed backwards and to the left by a rounded, lobulated, somewhat tender mass, of the size of an apple. This mass felt like a considerably thickened tube coiled on itself, tense in some places, doughy in others. Vaginal pulsation was increased in both fornices, but more in the right than in the left. The mobility of the uterus was not tested because of the risk of rupturing the distended tube.

As the facts of the case, though not typical, pointed strongly to the assumption that the case was one of tubal pregnancy, I performed celiotomy on 23rd October. The pelvis was found full of dark fluid blood, with some recent blood-clots. I immediately introduced my hand, broke through the loose adhesions, which fixed the mass above described to the posterior surface of the right broad ligament and the posterior pelvic wall, ligatured and removed the mass. As expected, it proved to be the coiled right Fallopian tube distended with blood. A large corpus luteum was found in the ovary, and chorionic villi were discovered by means of the microscope in the tubal mole which occupied the lumen of the tube.

Since the operation patient has been very well. Temperature and pulse normal. No sickness and no pain. Flatus passed on second day.

2. Pelvic hæmatocele—Vaginal incision and drainage—Recovery.—This case presents the typical features of a case of ectopic gestation, ending in rupture or abortion, and the formation of a large pelvic hæmatocele.

Patient, Mrs. A., æt. 30, was admitted into the Samaritan Hospital on 4th May, 1897. She was anæmic and very weak. The pelvis and abdomen, up to 2 cm. above the umbilicus, were occupied by a large, lobulated, boggy mass, only slightly sensitive to pressure. Above the pelvic brim the larger portion lay to the left. The uterus was in the middle line, but was slightly dextroverted, and was pushed forward to a finger-breadth from the pubis. Sound passed $3\frac{1}{2}$ inches.

Patient had had five children, the last four years before admission. The labours were natural and recoveries good. Menstruation had been normal, and there had never been pelvic pain.

On 25th March, five weeks before admission, after a period of five weeks' amenorrhœa, during which she had complained of morning sickness and breast symptoms, she was seized with a sudden faint turn, with vomiting and sweating, while on a visit to a friend. The attack lasted twenty minutes, and then, though weak and suffering from a bearing-down feeling, she walked home, and for the next two days did her housework fairly well. On the third evening, while out walking, she was seized with a second attack. The pain lasted two hours, was felt chiefly in the left iliac region, and was accompanied by retching and profuse sweating, but no vomiting. She got home with difficulty, and next day (28th March), as the bearing-down pain was severe and she felt weak, she kept her bed and sent for her medical attendant. Poultrices were ordered.

On 1st April, a week after the initial attack of pain, some blood appeared *per vaginam* for the first time. The quantity was slight, and there were no clots nor pain. It lasted only the one day. Three days afterwards she was allowed to rise, and on the following day (5th April) she had two more attacks of abdominal pain, faintness, and vomiting. Next day uterine hæmorrhage reappeared, and this time lasted four days.

On 7th April a membrane was expelled *per vaginam*; the doctor explained to her that it was a "miscarriage."

While this bleeding continued there were three further attacks similar to the first. From then until admission on 4th May there were no more attacks, but patient complained of weakness and of constant abdominal pain. Uterine hæmorrhage recurred on 29th April till 1st May, but was not excessive, and was not accompanied by any shreds, nor any increase of pain.

Micturition was difficult. From 7th till 14th April the catheter had to be passed regularly. The bowels were extremely constipated.

On 8th May I made a transverse incision in the posterior fornix, and enlarged it sufficiently to admit a ring volsella along with two of my fingers. While removing the contents, which proved to be blood-clot, a smart hæmorrhage set in; but, after emptying the sac, the bleeding was completely arrested by the use of sterilised sponges saturated with hazeline. A few of these were removed on the following day

and the others on 10th May, and the cavity was thereafter douched daily and packed with iodoform gauze.

Patient made an uninterrupted recovery, and was dismissed on 5th July, 1897.

She is at present (27th October) in perfect health. Menstruation is regular and painless, and uterus is in normal position and movable.

3. *Ovaries and tubes removed by anterior vaginal celiotomy.*—Both ovaries were cystic, and the left had a pediculated fibroma the size of a split pea attached to it.

4. *Total abdominal radical operation*—(*Total hysterosalpingo-oöphorectomy*).—The patient, Mrs. W., *æt.* 24, was admitted into the Samaritan Hospital on 8th October, 1897. Her last confinement (the third) took place on 1st September, and was managed by a neighbour woman. On the third day after the birth patient was suddenly seized with a violent rigor and severe pain all over the abdomen. The pain lasted five hours, and returned on the following day in the right iliac region. No more rigors followed, but there were daily perspirations, and patient lost flesh and became extremely weak.

When admitted she was greatly emaciated, very feeble, and markedly hectic. The pulse was rapid and very compressible; temperature was 101·4° F.; and there was constant pain in the right iliac region. The perineum and the vaginal portion of the cervix were only slightly lacerated. The os was not patent; and the uterus was distinctly enlarged, though the sound passed only 2½ inches. Its mobility was greatly restricted by a tender mass on the right, to which it was firmly adherent. This mass, which was as large as an orange, extended laterally to the right pelvic wall, but, though it was adherent to it, there was a distinct groove between the two. In front it extended to and was adherent to the abdominal wall just above Poupart's ligament.

The left appendages were apparently normal.

Each time patient was examined the pain in the right iliac region was so intensified that a morphia suppository had to be inserted.

Treatment.—Brandy, quinine, hot vaginal douches, and hot fomentations to the painful part. Owing to the increasing gravity of her symptoms, by the end of the second week I was compelled to operate. On 23rd October, I made a small incision above the right Poupart's ligament over the swelling, and dissected carefully down, but found that though the

mass seemed superficial it had not penetrated the peritoneum. Without opening the peritoneum at this point, I incised the abdominal wall in the middle line, and carefully examined the mass. It was found to be adherent to the intestine, omentum, anterior abdominal wall, and pelvic wall, and to be so incorporated with the uterus that it was plainly impossible to remove the one without the other. Some pus escaped while separating the adhesions. As from the intimate nature of the adhesions to the adjacent structures, it was impossible to get free access to the mass through the median incision, and as separation of the adhesions under these circumstances entailed considerable risk of lacerating the intestine, the abdominal incision first made was carried across to the lower extremity of the median incision, and the rectus muscle on the right side was cut across at a slightly higher level. The flap thus formed was raised and kept back by a volsella. Warm gauze compresses were used to protect the viscera from cold and contamination, and smaller pieces of gauze were used for sponges. While separating the adhesions distinct foci of suppuration were found in the posterior uterine wall; hysterectomy was, therefore, all the more strongly indicated. The left broad ligament beyond the appendages was first ligatured and cut, and then, after incising the uterine peritoneum transversely in front, and reflecting it and the bladder from the uterus, the anterior and posterior fornices were opened into. Finally, after ligaturing and dividing the uterine arteries, and subsequently the right broad ligament, the whole mass, consisting of the complete uterus and both appendages, was removed. The pelvis was irrigated, mopped dry, and stuffed at its lowest part with a strip of iodoform gauze, which, together with the ends of the silk ligature, was led into the vagina. While closing the abdominal wound, the patient became somewhat collapsed, but recovered on the administration of an intravenous saline transfusion. To-day (fifth day after operation) the gauze was removed. Patient is very well.

III.—ADJOURNED DISCUSSION ON EXTRA-UTERINE PREGNANCY.

Dr. Edgar's paper, on which this discussion took place, appeared in *Glasgow Medical Journal*, vol. xlviii, pp. 187, 253.

Dr. Edgar opened the discussion by giving a further report on the cases of extra-uterine pregnancy described at the meeting of the Obstetrical and Gynæcological Society on 28th April, 1897.

1. Mrs. W. *27th October*.—Patient much stouter, feels well, and does her work well. No pain in right iliac region; occasionally a slight shooting pain in the left iliac region. Uterus freely movable; no adhesions; some endometritis and erosion of os.

2. Mrs. H.—I have been informed that this patient is in perfect health.

3. Mrs. T.—Suppuration occurred in the stump of the left broad ligament. The silk ligature was discharged at the lower extremity of the abdominal cicatrix. This patient is now in perfect health. She suffers no pain in left iliac region nor in cæcal region. Menstruation normal. Uterus movable.

4. Mrs. B. *27th October*.—Never in better health. Occasionally slight flushings and sweats. Has not menstruated since operation. Uterus small and freely movable. No adhesions.

5. Mrs. C. *26th October*.—Still suffers from reflex neuroses, but is in fairly good health. In July she had severe menorrhagia. Menstruation since then has been normal. Uterus in good position, and fairly movable. Mass in Douglas' pouch now the size of a damson.

6. Mrs. M. *1st October*.—Feels well and looks well. No pain at menstrual periods, nor at other times. Menstruation latterly rather free. There is some endometritis, but the uterus is movable in every direction. There are a few adhesions posteriorly. No tenderness on examination.

7. Mrs. R.—I had a letter from Dr. Stevenson yesterday informing me that this patient is perfectly well, has no pain, and is menstruating normally.

Dr. W. L. Reid, in the discussion on the paper, said he could answer Dr. Edgar's question as to the result of expectant and medical treatment of hæmatocele. Most of the older medical men could remember many such cases, the large majority of which were due to ectopic pregnancy. He could remember a number where the symptoms slowly and gradually disappeared, and where examination some months later gave no evidence of the presence of a tumour. He did not say, however, that this was the best treatment, but otherwise. At the same time, he thought there was danger of pushing operative treatment to the extreme.

Dr. J. K. Kelly said that the paper suggested a good many questions. After referring to the use of the term "abdominal pregnancy" in the paper, he endorsed Dr. Edgar's opinion of the frequency of such cases. He had had 162 patients in his

ward at the Royal Infirmary during the last year, and nine of them were cases of ectopic pregnancy. As to diagnosis, it was apparent to all that it could only be provisional. There might be a history of preceding sterility, or preceding tubal disease impeding the progress of the ovum along the tube might be indicated. He was doubtful if hæmorrhage ever took place until the tube was ruptured. Hæmorrhage did not help much in diagnosis. The discharge of a decidua might indicate a normal as well as a tubal pregnancy. Internal hæmorrhage was the surest, but it was rather a late sign. As regards treatment, he considered that almost all cases should be operated on. Martin's summary of the treatment of such cases was abdominal section. The only doubtful cases were those in which the hæmorrhage seemed already to be undergoing gradual absorption. His experience of the vaginal incision had not been satisfactory. He had treated two of his cases in this way, and had to follow this by abdominal section. In all the others except two his method had been abdominal section, and in these two in which the treatment had been expectant he was sorry that he had not operated—there were still tubal swellings. Save in a very few cases, he would say operate, and by abdominal incision. Vaginal section left us uncertain, as there might be something beyond reach by this method.

Dr. J. Nigel Stark said that hæmorrhage must largely depend on the situation of the placenta. There were no diagnostic symptoms. A bimanual examination was necessary. As to treatment, he would remove the tube before rupture; after rupture it might not be necessary to operate. He could remember two cases that got quite well without operation, the hæmorrhage having been extra-peritoneal. If tubal disease was discovered afterwards he would then operate.

Professor Murdoch Cameron said that when papers were based on the appearances of specimens, these specimens should all be submitted to the Society's pathologist. The paper was wrongly styled a series of cases of extra-uterine pregnancy. Nowadays the occurrence of hæmatosalpinx was shut out. None of these cases was advanced; if there were no embryo, the pedicles, or at least the villi of the chorion, ought to be seen. He did not see why they should be described as moles; he would call them blood clots. He had no doubt that many of these were cases of hæmatosalpinx. In such cases they had not the horrible shock that was seen in ectopic pregnancy. The specimens should be shown so that the Fellows might see for themselves. He would tear out the first six cases. He

would regard them as suspicious, and would not stamp them as ectopic. In the diagnosis the one marked point was the extreme sickness, which doubtless caused the rupture of the tube. It was not like the sickness of a normal pregnancy. Some cases might be operated on by the vagina, but in others this could not be done successfully. Abdominal was much to be preferred to vaginal section. He had seen scores of cases that got better under medical treatment.

Dr. Edgar, in reply, pointed out that recovery in medical cases was slow; that after vaginal opening was much more expeditious, as was seen in Cases VI and VII. He had used the term "abdominal pregnancy" on general grounds, as the particular variety of such abdominal cases was often difficult to diagnose accurately. With regard to the doubts as to diagnosis, he wished more attention to be paid to the grouping of the symptoms. He considered the history of the case no less important than the bimanual examination. He had mentioned the decidua as a sign of pregnancy, not necessarily ectopic pregnancy. He advised vaginal section in cases of pelvic hæmatocele and of ectopic gestation at the fourth to the seventh month. After opening and emptying the sac, he advocated bimanual examination of the sac at the time. If there was a distended tube he would certainly remove it. There was less shock in this mode of operating, the peritoneal cavity was not opened, and drainage was secured at the lowest point; but, over and above these, his liking for this method was based on experience. Besides his own cases, he had seen twelve others treated by vaginal operation by *Dr. Stirton*, in which all except one had recovered satisfactorily. With regard to Professor Cameron's criticism of the diagnosis, he (*Dr. Edgar*) said that the specimens had been exhibited to the Society in April when the paper was read, and that a pathologist had examined the specimens, and had found chorionic villi, which were not difficult to diagnose under the microscope. He had no doubt the cases were ectopic pregnancies, even Cases V and VI, where pelvic hæmatocele had been found. As to the great shock on which Professor Cameron laid stress, in some cases there was no shock whatever, and yet chorionic villi were found in the tubal mole. In Case IV the amnion was seen as well as the chorion. As to sickness, in his first three cases there was no history of sickness, so that this symptom could not be regarded as especially important in the diagnosis, nor in the causation of rupture of the tube.

GLASGOW SOUTHERN MEDICAL SOCIETY.

SESSION 1897-98.

MEETING IV.—2ND DECEMBER, 1897.

*The President, DR. JAS. W. ALLAN, in the Chair.*I.—TURBINECTOMY FOR THE RELIEF OF NASAL OBSTRUCTION
AND ASTHMA.

BY DR. WALKER DOWNIE.

Dr. Downie's paper dealt chiefly with those cases of obstruction dependent on hypertrophy of the turbinal bones and their covering mucosa, and he referred in a few words only to septal deflections, deformities and outgrowths, mucous polypi, post-nasal adenoids, and other conditions which may interfere with nasal respiration. He directed attention to the symptoms dependent on turbinal hypertrophy, and as a result he divided the twenty-seven cases which formed the bases of his remarks into three sets. In the third and most interesting set the distress complained of was asthmatic in character. Although the asthma was in each case due to some intra-nasal abnormality, he stated that there was no *constant* nasal deformity or lesion to account for the reflex manifestation unless it was hypertrophy of the posterior ends of the inferior turbinals, where the vascular mucosa was in each case markedly roughened and oedematous. As against this, an apparently similar hypertrophy may and did exist in many of the other cases without causing asthma.

Dr. Downie then described in detail the various methods by which partial and complete turbinectomy may be performed and the instruments employed. He stated that he now never performs complete inferior turbinectomy, but that in cases where there is great hypertrophy of this bone throughout its length, he first performed anterior inferior turbinectomy by cautery and scissors, following this by posterior inferior turbinectomy, using cold wire, Swan or Jones' spokeshaves, and doing these in such a way as to leave a tongue-shaped portion of bone in the centre. By such a procedure, dry pharyngitis, which is so apt to follow a complete turbinectomy, will be prevented.

The paper, which was a thoroughly practical one, was illustrated by numerous specimens, photographs, and wax casts.

Many of the members took part in the discussion which followed.

II.—A CASE OF SPECIFIC SKIN DISEASE.

By DR. BURGESS.

Dr. Burgess exhibited photographs of a case of specific skin disease, illustrating the marked improvement under iodide of potash in large doses.

GLASGOW EASTERN MEDICAL SOCIETY.

SESSION 1897-98.

MEETING III.—10TH NOVEMBER, 1897.

The President, DR. W. FINDLAY, in the Chair.

DR. DUNLOP read a short paper introducing a discussion on "Acute Bronchitis, with Special Reference to its Treatment in Children."

He said he had no new theory to propound, and no new remedy to suggest. He rapidly sketched the pathology of the disease, and then proceeded to deal with the treatment.

This, in all cases, must be first of all prophylactic, by means of pure air, pure water, good food, good hygienic conditions, and freedom from unnecessary exposure to cold, and, at the same time, not too close confinement of children within doors. This last was as fruitful a source of bronchitis as any other, inasmuch as the power of resistance to cold, when exposed to it, was greatly lessened. In seasons when inclement weather prevailed, a child could often get the benefit of the open air by being allowed to play, when dressed as for out-of-doors, in a room where all the windows were opened wide, and free currents of fresh air permitted to circulate.

In speaking of the curative means, Dr. Dunlop said that the great popular treatment was by poulticing. Poultices, he thought, if properly applied did good, but at the best they were a cumbersome mode of treatment, and were exhausting to the patient and troublesome to the nurse. As a substitute he had tried the wet compresses of Henoch (*Diseases of Children*, in New Sydenham Society's edition, vol. i). In those cases where the respiration was greatly impeded from

choking of the minuter bronchioles, the compress should be applied cold, so that the shock of its application would cause the patient to gasp, and so fill out the blocked tubes. Indeed, this presence or absence of the gasp on sudden application was, in addition, a valuable aid in prognosis; where no deep inspiration took place, recovery was practically impossible. When the temperature was high, these cold compresses should be applied at frequent intervals, for instance, every two or three hours. If they were to be used as a substitute for the poultice, they should be applied hot. The compress should consist of a double layer of flannel, then a layer of Gamgee's tissue, and then, with an overlapping margin of at least 2 inches all round, a layer of jaconet.

The medicinal treatment should consist, in the first stage, of mustard bath or hot bath, depressants, diaphoretics, with, later, sedatives if cough is irritating. The aim in this dry stage is "to make the tubes sweat," and for that purpose the various preparations of ammonia, ipecacuanha, squills, antimony, &c., may be used.

Stimulants are to be used in accordance with the state of the pulse. Belladonna, strychnine, digitalis and iron, and oxygen may all be used in various cases.

If drowsiness should be present, energetic slapping with a wet towel, or sousing rapidly with cold water, though apparently a cruel method of treatment, frequently does much good.

Emetics, as ipecacuanha wine, were frequently useful, so also were mechanical means of producing vomiting, but apomorphine had given almost disastrous results.

Dr. Miller had tried a modification of Henoch's cold compress treatment. He thought that the public would require much educating before such treatment could be popular.

Dr. Barras was accustomed using pure mustard in acute bronchitis of children. It was applied for ten minutes, and reapplied when the skin began to pale. That was followed up by a stimulating liniment.

Dr. T. Russell could not see the difference between Henoch's compresses after they had become warm and poultices. Apomorphine he had used frequently, and always with good results. Digitalis he condemned.

Dr. McLean thought that in the etiology of acute bronchitis climatic conditions played an important part. He pleaded for simple methods of treatment, avoiding sedatives generally, and opiates at all times in children.

Dr. Service had used frequently, and with good effect, antipyrin in doses of 1 gr. or $1\frac{1}{2}$ gr. to each year of the child's age if the temperature rose to 102° F.

Dr. Dunlop, in reply, advocated the avoidance of a routine line of treatment. In some cases the ordinary poultice was of benefit, in others he preferred Hæmorrhoids' compress. Nor did he think that a cold application, as he had described, was a heroic treatment when used as an antipyretic. The better education of the people in such matters of popular prejudice as routine poulticing was entirely in the hands of medical practitioners, who too often sacrificed their own judgment for the sake of monetary gain.

REVIEWS.

Air, Food, and Exercises: an Essay on the Predisposing Causes of Disease. By A. RABAGLIATI, M.A., M.D., F.R.C.S. Edin. London: Baillière, Tindall, & Cox. 1897.

ALTHOUGH in this essay, which covers over two hundred pages of printed matter, defects in air, food, and exercises are equally regarded as predisposing to disease, the first and last are but briefly touched upon, as their influence on bodily health has already been well investigated. For the same reason, water is not treated of. Errors in nitrogenous food the author esteems much lower than faulty assimilation of carbohydrates. His prime assumptions are:—(1) That in this country we eat too much and too often; (2) that we consume carbohydrates in excess, and so burden the blood and tissues with unoxidised materials, weakening resistance to morbid influences, loading the mine that but awaits the spark of the exciting cause to explode into active and deadly disease.

Dr. Rabagliati argues as follows:—Mortality returns for England and Wales show that, though expectation of life is now better at the extremes, between the ages of 25 and 65 there has been for the past half century little improvement in the death-rate, and, that, discounting 20 per cent for unavoidable and accidental deaths, there still remain 136,000 deaths per annum of persons in their prime. Death before the age of 65 is preventable, and ought to be prevented. Bronchitis and asthma, pneumonia, apoplexy, and cancer are prominent and

increasing causes of death. Diabetes is also on the increase. There is no disease-producing material in the body (excluding infection from the surface) which was not first in the blood, and nothing noxious in the blood which was not first in the air or food.

Improved sanitation has lowered the death-rate from zymotic diseases and phthisis, but has not affected bronchitis and asthma, pneumonia, apoplexy, cancer, and diabetes. Cold, heat, micro-organisms, are only exciting causes which a healthy body should be able to resist.

Heredity can have little effect on the constitution or present bodily state of a person over 25 years. The environment must be at fault. Some error in feeding, with the possible adjunct of inefficient exercise, must be the predisposing cause of these diseases. They are becoming more common. And what dietetic error do we find co-extensively increasing? The consumption of carbohydrates in excess. This causes disorder of the digestive organs, followed by the production of imperfectly made blood loaded with undigested particles. A chronic progressive anæmia, "*tripphthæmia carbonifera*," is set up. These particles are deposited in muscle sheaths, nerve sheaths, mucous membranes, periosteum, joints; and hence arise congestions, inflammations, myalgia, neuralgia, catarrh, bronchitis, influenza, pneumonia, diarrhœa, herpes labialis, tonsillitis, periostitis, abscess, rheumatism, eczema, erysipelas faciei, headache, meningitis, apoplexy, diabetes, tumours, Bright's disease, and cardiac disease.

The validity of this reasoning may be tested by reducing the carbohydrates in the diet. A few examples are given of chronic bronchitis, pruritus ani, and urethral caruncle being successfully treated in this way; but when serious disease has supervened the whole system is supposed to be so impregnated with carboniferous waste as to be utterly ruined.

Frequent digressions are made in the course of the argument. Of these the most important are:—On the influence of heredity; on medical fallacies; on the division of disease into "acute" and "chronic," without regard of the Hippocratic and more reasonable division into "mild," "acute," "of long duration," "of brief duration;" on the results of surgery as affecting death-rate, surgery being brilliant in special cases but having no influence on general mortality; on definitions of such terms as constitution, predisposition, atavism, diathesis; on the action of bacilli on the organism, and the resistive power of the latter; on the nature of simple, recurring, and malignant growths.

The central design of the book does not occupy much space, but its rays are scattered over the whole, and it appears and reappears in varying phase and brilliancy. Its satellites are as much more interesting as they are more solid.

Dr. Rabagliati is original, and he states his opinions with hardihood. If there be joints in his armour he challenges the profession to try. We decline, because, in the words of the author, "it is well known, of course, in hospitals that young men know, as in most departments of life, much more than their seniors. And the mistakes of older men, when they commit them, are treated far more hardly than those of younger ones, which are generally quietly passed over."

Surgical Pathology and Principles. By J. JACKSON CLARKE, M.B.Lond., F.R.C.S. London: Longmans, Green & Co. 1897.

THIS volume of four hundred odd pages is an attempt at a concise grouping of branches of pathology which have more particular bearing upon surgical phases of disease, and it is an attempt at combination of such so as to bring the latest known facts into relation with past knowledge and methods of treatment without losing sight of the advantages to be gained by a judicious brevity in description. Indeed, the attempt, particularly in this direction, is very happily justified in most cases. For example, the chapter dealing with causes, methods, and effects of intestinal obstruction is certainly, for such, wonderfully brief, and yet it seems to give one a fairly graphic idea of the subject. Again, the exceedingly short notice of hernia in its various forms provides an almost unique example of lucidity combined with brevity. The author, too, as might be expected, is quite at home in the portion of the work dealing with specially orthopædic surgical conditions, and his short survey of such is admirable.

It may at once be said that much of the success in this work is due to the choice illustrative and diagrammatic accompaniment. Weichselbaum frequently, and Coats in not a few instances, with several other prominent pathological authorities, are drawn upon to accomplish this, while numerous additional illustrative drawings, especially of microscopical appearances, evidently original, are included.

One might, of course, cavil at not a few statements made, and question the advisability of omission of sundry minor conditions which might well come within the compass of such a work. To have stated casually, as if beyond the region of

dubiety, that suppuration might occur as late as seven or eight weeks after ligature of a vessel for aneurysm, would certainly make one speculate wildly upon the exact meaning, after all, of modern surgery and asepsis, if not question the care and cleanly workmanship of the operator. To have a survey of aneurysms, their methods of cure, natural and surgical, without so much as mention of the method of procuring closure by "needling," suggests at least a want of thought. Possibly the least happy portion of the volume is that where the author seems rather to lose himself amongst the intricacies in the classification of alveolar sarcoma. These are, however, small defects in the generally commendable qualities of Mr. Clarke's work, and will not seriously impair its usefulness.

The Deformities of the Fingers und Toes. By WILLIAM ANDERSON, F.R.C.S. London: J. & A. Churchill. 1897.

THE author has developed this treatise on a comparatively little known branch of surgery from a course of Hunterian Lectures delivered by him in 1891 in the theatre of the Royal College of Surgeons.

When one considers the frequency of malformations of the fingers or toes, whether congenital, traumatic, nutritional, spastic, or degenerative, which every medical man meets with in the course of everyday work, it is not a little surprising that anything like a proper understanding of the causes at work in their production, or of satisfactory methods of treatment, can only be said to have dated a comparatively few years back. It need hardly be predicated, indeed, that although such affections are not, so to speak, of "vital" importance, yet they not infrequently involve so much inconvenience, if not indeed actual incapacity, that such a thorough and altogether admirable treatise as this must be very welcome.

It is not merely in the portions dealing with the etiology of the various conditions taken up that Mr. Anderson has indeed accomplished his task to advantage, but in the descriptions of treatment he has left little to be desired. The few diagrams included are such as cannot fail to convey a clear idea of what they are intended to bring out.

In the discussion of Dupuytren's contraction it is at once interesting and bewildering to find Mr. Anderson practically throwing to the winds all one's previous notions as to the etiology of the condition. Neurotic, gouty, hereditary,

rheumatic, alcoholic causes—all are alike discussed, and at the end the only one which Mr. Anderson can evidently trace any clear connection with is the hereditary element, and even that accounts for only a percentage of cases. Much evidently remains to be done in that subject, and it is refreshing to have such an authority freeing himself from traditional dogma, and practically admitting the lack of anything like accurate data. Apart from everything else, Mr. Anderson has succeeded in producing a most readable volume.

The Practice of Massage: its Physiological Effects and Therapeutic Uses. By A. SYMONS ECCLES, M.B., M.R.C.S. Second Edition. London: Baillière, Tindall & Cox. 1898.

THE first edition of this work was very favourably reviewed in the *Glasgow Medical Journal* for 1896, and a glance through the present edition does not incline us to depart from the good opinion already expressed. The work has been revised, and some additional clinical matter has been introduced, an effort being made at the same time not to increase the bulk of the volume. We congratulate the author on the hearty welcome accorded to his work.

Harvey and Galen: The Harveian Oration delivered before the Royal College of Physicians, 19th October, 1896. By JOSEPH FRANK PAYNE, M.D.Oxon. London: Henry Frowde. 1897.

DR. PAYNE is well known as one of our most eminent authorities upon the history of medicine, and his Harveian oration will do much to extend and increase his reputation. The sub-title—"On the Relation of Harvey to his Predecessors, and especially to Galen"—very faithfully and accurately indicates the aim which the orator had before him in composing the oration. The keynote of the deliverance is the establishment of the truth that all men, even the greatest and the most eminent, owe much, more perhaps than can ever be accurately estimated, to their predecessors. In this respect Harvey did not differ from the other great benefactors of the race; and, starting from this truth, the orator proceeds to show wherein Harvey was indebted to those who had before laboured in the same fields as himself. Amongst all these he believes that he was most indebted to Galen, who as a physio-

logist, anatomist, and experimentalist, was to be regarded as the immediate predecessor of Harvey. To prove this Dr. Payne gives a masterly account of the development of medicine from the time of Galen onwards, in a concise style which only a writer thoroughly conversant with the details of medical history could attempt. He is evidently an intense believer in Galen, and thinks that there is no other man of equal intellectual rank who has been so persistently misunderstood and even misrepresented. We have great sympathy with the views expressed by Dr. Payne, more especially as we find that his admiration for the old "prince of physicians" does not lead him into extravagant notions as to Galen's intellectual character and work. "For Galen I think the day of restitution cannot be long delayed. He was not one of the great geniuses of the world, but very high in the second rank. He was one of the most illustrious of all physiologists, and among the ancient physicians we may still allow him the old honourable epithet so often used—'Omnium medicorum secundum Hippocratem facile princeps.'" This we consider to be a temperate, impartial, and most accurate estimate of the position in history of a distinguished physician. The short *résumé* we have just given indicates the scope of the oration. In addition, Harvey's indebtedness to the earlier anatomists and to Aristotle are also fully discussed, and the part played by Linacre Caius and others in sending men back to the original Greek texts is clearly indicated. The student of medical history will find Payne's *Harvey and Galen* of great service to him in his researches.

Transactions of the Chicago Pathological Society (December, 1895, to April, 1897). Chicago: American Medical Association Press. 1897.

THIS, the second volume of the transactions of this Society contains abundant evidence of a good session's work. We mention but a few of the subjects brought under the notice of the Society:—Spontaneous Dislocations of the Hip-Joint in Acute Infectious Diseases; Chylous Ascites; Gumma of the Hypophysis; Monomphalic Ischiopagus (a composite monster); Primary Sarcoma of the Tail of the Pancreas; Tricuspid Stenosis; Iniencephalus; Diffuse Scleroderma associated with Fibrous Changes in the Thyroid and Enlargement of the Hypophysis; and Congenital Malformation of the Heart in a man of 32 years.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

NERVOUS DISEASES AND INSANITY.

By DR. R. S. STEWART.

The Cutaneous Reflexes in Epileptics. Féré (*Comptes Rendus de la Société de Biologie*, October, 1897).—These reflexes were investigated in one hundred and thirty-seven patients, some of whom were undergoing treatment by bromide, and the result is as follows:—

PERCENTAGE OF ABSENCE OF CUTANEOUS REFLEXES.

	Taking Bromide.	Not Taking Bromide.
Cutaneous-pupillary,	100	100
Superior scapular,	91	85
Inferior "	91	78
Palmar,	98	98
Epigastric,	27	17
Superior abdominal,	15	9
Inferior "	12	9
Cremasteric,	right, 41; left, 42	right, 42; left, 50
Gluteal,	75	73
Plantar,	21	28

The action of the bromides, even in large doses, upon the reflexes would appear to be less manifest than one might have supposed.

Etiology and Pathogenesis of General Paralysis. By Mairé and Vires (*Archives de Neurologie*, October, 1897).—The pathogenic causes of general paralysis, in the opinion of these observers, are arthritic, alcoholic and cerebral heredity, and personal alcoholism. It is by inducing a precocious senility that arthritism produces general paralysis, and in such cases all the internal organs present evidence of the degenerative lesions of commencing senility, fatty or sclero-fatty degeneration. Cerebral heredity produces in the central nervous system a tendency to diffuse inflammation of the vascular system and a lessened organic resistance of the nerve cell, and it is by degenerative cell and vascular changes that alcoholism acts in the production of general paralysis.

General Paralysis. (*Archives de Neurologie*, November, 1897).—Vallon, of Paris (at the Moscow Society of Neuropathology and Psychiatry), affirms that heredity, syphilis, and alcoholism constitute a sort of tripod which is the etiological basis of general paralysis. Sometimes, in the absence of heredity, syphilis or alcohol may be the sole cause, but the most favourable conditions for its development occur in those who, hereditarily predisposed, contract syphilis, and are further addicted to alcoholic excess.

Greidenberg, of Simferopol, Crimea, at the same meeting, shows that general paralysis in women is becoming in these latter times of much more frequent occurrence, and that the increase is relatively greater than among men. The propagation of general paralysis in the different classes of society among men and women is altogether opposite; in men it has commenced among the higher classes and is descending gradually to the middle and lower classes; in women, on the contrary, it is a disease which, up to the present, has exclusively existed in the lower classes, and has only lately penetrated

into the middle and upper classes. In men, the disease, formerly aristocratic, becomes more and more democratic; in women, the contrary holds. The causes are the same in the two sexes, but the clinical picture in women offers certain peculiarities; the course is slower, and the duration, in consequence, longer than in men.

Tabes Dorsalis (*Archives de Neurologie*, November, 1897).—Colella (Messina) argues that the amyotrophic paralysis, widely spread and grave, noted in tabes are to be attributed not to changes in the grey substance of the anterior spinal cornua which present scarcely appreciable, and very circumscribed, histological modifications, but to a generalised and profound primary alteration of the anterior spinal roots, a parenchymatous radicular neuritis.

In the opinion of Darkschewitsch (Kasan), the alteration of the posterior columns is not a primary affection but a secondary phenomenon induced by two morbid processes, inflammatory modifications of the peripheral nerves, and chronic progressive inflammation of the spinal membranes.

Histology and Pathology of the Neuroglia. By Robertson (*Journal of Mental Science*, October, 1897).—On many points this writer is opposed to the views entertained by other observers. He describes the neuroglia as developed from the epiblast, and consisting essentially of highly branched cells, varying in size and in the number and arrangement of their processes. The fibres are in anatomical and physiological union with the cell-body, and many of them are attached to the adventitia of the vessels by fan-shaped expansions, while, probably, some end freely. A small percentage of the cells probably remain in which the protoplasm has not become differentiated into fibres, and some fibres may become entirely separated from the cells. Besides hypertrophic changes, the neuroglia cells are liable to be affected with pigmentation, which occurs especially in chronically hypertrophied cells, and a peculiar swollen blurred condition of the cell-body is described, the exact import of which is not clear. Neuroglial hypertrophy is commonest in senile insanity, and is associated with pigmentation, often to an extreme degree. Similar, but less pronounced, changes are noted in alcoholic insanity. Inasmuch as neuroglial changes are absent in some cases of undoubted general paralysis, Robertson adopts the view that these are secondary and non-essential changes.

SURGERY.

By GRANT ANDREW, M.B., C.M.

The Radical Cure of Inguinal Hernia.—George Ryerson Fowler, of New York (*Annals of Surgery*, November, 1897), describes a new procedure in the radical treatment of inguinal hernia. The operation consists in obliterating the internal ring and inguinal canal completely and absolutely, and displacing the cord so that it lies close to, and below the level of, the pubic bone.

The presence of the cord at the internal ring in the Bassini operation, even although the whole canal is obliterated, is considered a weak point, and favourable to the production of the direct form of hernia; hence this modification.

The steps of the operation are briefly as follows:—

1. A curved skin incision which furnishes easy access to all the parts involved in inguinal hernia.
2. Splitting the anterior wall of the inguinal canal from the external to the internal ring.
3. Isolation of the cord and sac together from the surrounding parts, after

which these are separated from each other, and cleared well up to the internal ring.

4. Double ligature of the deep epigastric artery, with sufficient space between the ligatures to permit of incision.

5. Cutting away of the neck of the sac, and incision of the posterior wall of the inguinal canal and Hesselbach's triangle. The finger is introduced as a guide, and the intervening structures are divided with scissors, the division including, from without inwards, the transversalis fascia, the subperitoneal connective tissue, and the peritoneum.

6. The cord is transplaced into the peritoneal cavity from the site of the internal ring to a point below the level of the pubic bone.

7. Broad approximation and suturing of the peritoneum and transversalis fascia in front of the cord for the space mentioned.

8. Obliteration of the internal ring and inguinal canal by accurate suturing, and strengthening of Hesselbach's triangle and the new point of emergence of the cord by outward displacement of the pubic attachment of the corresponding rectus muscle. The canal sutures should include the conjoined tendon and aponeurosis of the external oblique upon the inner margin, and Poupart's ligament upon the outer. The two lower sutures should include the outer edge of the pyramidalis, if this be present; and if not, the rectus muscle. The object of this is to displace a portion of the muscular tissue, so as to form a guard to the point of exit of the spermatic cord. To secure a more accurate coaptation of the margins of the aponeurosis of the external oblique a continuous suture is also used, the turns of the suture passing in the spaces between the interrupted sutures.

Five cases have been operated upon by this method, with an immediate good result.

The results in the radical treatment of hernia seem to depend largely upon the practice of the individual operator and his perseverance in the practice of one method.

Good results can be and have been obtained from all the methods. One has not to search far in continental and other literature to find the virtues of any particular method extolled, and statistics given of excellent results. For example, Kocher (*Centralblatt für Chirurgie*, 15th May, 1897) prefers his own method—that of drawing the detached sac through an opening made in the external oblique, above and external to the upper limit of the inguinal canal—because the canal is not laid open (Bassini), because his method has been successful in the hands of inexperienced assistants, and because his statistics are good.

His own results are—103 inguinal hernias; primary union in 91·3 per cent, with discharge of patient in 10·7 days; on the average, 8·7 per cent of delayed union; average duration of hospital treatment, 32·6 days. Recurrence in 3·6 per cent (4 cases). Mortality nil. 20 out of 198 were less than 15 years old, while 61 were over 40 years old.

Gonorrhœa.—Very many remedies and methods of treatment have been suggested for this condition, but none seem to give perfectly satisfactory results.

In the *Centralblatt f. Dermatol.*, October, 1897, Neissen speaks very highly of protargol, a silver compound. He regards it as a bactericide pure and simple. It can be used from the beginning of the attack. He suggests the following rules for its use:—

1. The presence of the gonococcus must be demonstrated, and also whether the posterior urethra is affected as well as the anterior.

2. Systematic injection should be begun at once.

3. Injections should be given thrice daily, the first two remaining in for five minutes and the third for thirty minutes; if the secretion be considerable, the solution should be changed five or six times. After a few days' treatment one injection a day will suffice, but this should be continued for two or three weeks.

4. The strength of the protargol solution should be $\frac{1}{2}$ per cent, increased up to $\frac{1}{2}$ or 1 per cent.

The Frequency of Complications in Gonorrhœa.—Much more has been written of late on the after-effect of gonorrhœa in the female than in the male. Colombini, however, in the *Giornale Ital. delle Malatt. Vener. e della Pelle*, 1898, 5, records the results of a careful statistical inquiry as to the frequency of local complications in gonorrhœa in the male.

He examined each case per rectum for the objective signs of disease, and found slight and painless lesions of some sort in 62·5 per cent of cases examined. The prostate was frequently tender, and generally or locally enlarged. The vesiculæ seminales were found to be hard, better marked than usual, and a little painful, and the pre-rectal part of the vas deferens converted into a hard and somewhat tender cord.

A summary is then given of an investigation of 400 cases.

In 92·8 per cent the disease had spread to the posterior urethra.

In 141 cases, or 35·25 per cent, lesions of the prostate, vesiculæ, or pre-rectal vas deferens were present.

Of these 141 cases 88 had prostatitis, 5 vesiculitis, 46 both prostatitis and vesiculitis, and 2 both these with pelvic vasitis as well.

All the patients were free from symptoms of complications at the time, so that these were in every respect latent.

The author considers it possible that these inflammations may lead eventually to senile prostatic hypertrophy and other troubles of later life.—(Epitome, *British Medical Journal*, 442.)

Bunion: its Etiology, Anatomy, and Treatment. Parker Syme (reprint from *New York Medical Journal*, October, 1897).—This condition is described as a complex one, involving the structures which form the metatarsal-phalangeal joint of the great toe and the superficial tissues in its region.

Bunion is always a secondary condition, secondary to a condition of hallux valgus. The amount of displacement of the first phalanx varies from a slight divergence to that equal to a right angle.

The cause is invariably faulty-fitting shoes, and the amount of deformity depends upon the duration and severity of the cause.

There is either partial or complete loss of function in the joint, limited motion, joint crepitus, and tenderness.

An acute attack of inflammation should be treated by rest, disinfection, and the application of some evaporating lotion.

In regard to the deformity, very early cases may be treated by attention to the shoes and the use of pads or splints; but an advanced case will not be cured by any means short of operation.

Various operative procedures have been tried:—Arthrotomy, ablation of the sesamoid bones and transplantation of the tendons (Ullmann), longitudinal osteotomy of the inner side of the metatarsal bone and excision of the base of the first phalanx (Riedel), resection of the head of the metatarsal bone (Fowler).

The writer's views are as follows:—

1. To employ different operative procedures according to the degree and character of the deformity.

2. Never to operate during an acute attack of inflammation.

3. Always to treat the deformity and never operate on the bursa, for it will take care of itself after its cause has been removed. Exceptions to this are the removal of callosities from the bursa, and the incision of the bursa when it suppurates.

4. Never to make the operation incision around the bursa or through the bursa, for two reasons: because it would leave a scar where the shoe presses most, and because the operation would be through an infected area.

5. Never to use an Esmarch's bandage.

6. To close the wound by suture without drainage.
7. To remove the inner condyle through an incision about 1 inch in length on the dorsum of the toe, or in more severe cases to remove the head of the metatarsal bone with its prominent inner side. A plaster of Paris bandage is put over the entire dressing. The patient is encouraged to walk at the end of the third week.

Skiagraphs illustrate the paper.

DISEASES OF THE EYE.

By FREELAND FERGUS, M.D.

New Operation for Ectropion ex Vacuo.—Ectropion ex vacuo is a condition which sometimes happens after an enucleation, even when the operation is carefully performed. In a few cases it is found that on account of ectropion the artificial eye will not remain in position, and, moreover, from the displacement of the inferior lachrymal punctum, there is considerable overflow of tears.

To remedy this state of matters, Professor Truc has devised a simple operation. By an incision in the intramarginal space he first divides the entire lid into two flaps; an anterior one containing skin and muscle, and a posterior one containing the tarsus and conjunctiva. The anterior flap is next drawn up throughout its entire extent till it projects considerably beyond the posterior. The two flaps are sutured together in this relative position.

If the anterior flap be too much drawn up there is apt to be ectropion. Should this take place, Professor Truc cuts a flap from the skin at the outer side of the orbit, passes it through a button-hole behind the posterior surface of the lid with its epithelial covering towards the cavity. This, he says, prevents any ectropion being formed.

Holocaine is the latest anæsthetic tried locally in ophthalmology so far as we are aware. It is, of course, proposed as a substitute for cocaine, although why such constant attempts should be made to supplant a drug at once efficient and easily handled, we are at a loss to know.

So reliable an observer as Masselon has been trying it, and gives the results of his experiments in the last number of the *Archiv. d'Ophthal.* He finds that it has this distinct advantage over cocaine that he did not notice any dilatation of the pupil, any paralysis of accommodation, or any rise in tension. Now, all these incidents occur more or less with cocaine. On the other hand, the first application of holocaine is more painful than that of cocaine, and the anæsthesia produced by it does not last nearly so long. He does not agree with Hirschberg in thinking that it is a better anæsthetic for inflamed eyes than cocaine.

Studies in Visual Acuteness and on the Amplitude of Accommodation. By Fromaget and Bordier (*Archiv. d'Ophthal.*).—This is an interesting monograph which well repays perusal. It must, however, suffice briefly to recapitulate the conclusions at which the authors have arrived.

1. They find that the visual acuteness increases till the age of puberty, and then very slowly declines. The observations were made on persons between the ages of 5 and 20 years. At the former age on the average they find it to be 1.05; at 14 years it is 1.6; and at 20 it is fractionally under 1.5.

2. As to the variations of the amplitude of accommodation with the static refraction, they give three important curves. In this part of their work they first of all establish the curve for emmetropia, and then those for myopia and hypermetropia respectively. That for myopia shows that at all ages above 13 years the amplitude of accommodation is less than that corresponding with

the same age in emmetropia, while it is greater for hypermetropia. It is important to notice that in these investigations they have omitted all cases of myopia above 4 D and all hypermetropes above 2.

This variation, however, depends on the ametropia, for on examining persons who had been wearing correcting glasses for some time, it was found that the amplitude of accommodation was similar to that of emmetropia.

In one or two cases of myopia it was noticed that the accommodation was more like that found in uncorrected hypermetropia, but in these cases the persons were found to be over corrected—i.e., they were really in the condition of hypermetropics.

Such changes they attribute to the ciliary muscle. In hypermetropia it undergoes a hypertrophy; in myopia an atrophy, not essential, but physiological. But further, an examination of a number of soldiers of the working class proved that in these people, who never used their accommodation much, it was inferior in similar states of refraction to that of students. Thus they formulate the law that—*The amplitude of accommodation is proportional to the accommodative work.*

Partial Atrophy of the Optic Nerves following an extensive Burn of the Skin which was treated by Iodoform.—The patient, a woman of 48, was extensively burned on the thighs, on the abdomen and on the arms by a lamp accident. The surface was dressed with iodoform after some time. Three weeks from the commencement of the iodoform the vision became extremely weak, and was not improved by any treatment. When seen by M. Terson she had had defective vision for several years, and it is important to note that, so far as the patient was aware, the visual acuteness had not altered at all.

Ophthalmoscopic examination showed marked atrophy of both optic discs, especially at their temporal aspects. There was no appreciable lesion in the macula, nor, indeed, in any other part of the fundus. The field of vision was not contracted, but there was a colour scotoma. The case was therefore one of partial atrophy due either to a burn or to some other form of poisoning. Was this due to iodoform poisoning or to the burn itself? The author believes it to have been from the iodoform. The whole condition closely resembled, if indeed it was not identical with, post-bulbar neuritis. Fundus conditions due to burns are inflammatory. Thus there are often neuro-retinitis and hæmorrhages, which hæmorrhages closely resemble those of septic retinitis.

Nature and Treatment of Exophthalmic Goitre (*Académie de Médecine*). Although this disease does not specially belong to the province of the ophthalmic surgeon at all, yet we may be allowed briefly in these notes to mention the very important communication made to the Académie de Médecine last July by Charles Abadie. To begin with, Abadie does not hold that the starting-point of exophthalmic goitre is hypertrophy of the gland. He believes that it is due to permanent excitation of the vaso-dilators of the sympathetic. Of this theory he finds confirmation in the effect of division of the cervical sympathetic below the superior ganglion. This operation produces the most marked benefit. Only in one or two cases has the condition tended to recur, and in these it is thought that probably all the nerve fibres have not been divided.

In exophthalmic goitre the thyroid hypertrophy is not primary; it is secondary to the dilatation of the thyroid arteries. The exophthalmos is due to dilatation of the retro-bulbar vessels. Section of the cervical sympathetic beneath the superior ganglion abolishes the vaso-dilatation of the retro-bulbar blood-vessels, and thus the exophthalmos disappears. The superior thyroid also loses its dilatation, and the goitre diminishes. Thus in all well marked cases of exophthalmic goitre, section is the proper treatment. In doubtful cases the thyroid treatment should be given, for this makes true ophthalmic goitre worse, whilst it improves the ordinary varieties.

Charles Abadie entirely disapproves of any surgical operation on the thyroid body itself.

Books, Pamphlets, &c., Received.

- Human Nature: its Principles and the Principles of Physiology, by Physicist. Part I. London: J. & A. Churchill. 1897. (2s.)
- City of Bristol: Interim Reports on an Outbreak of Milk-borne Enteric Fever in Clifton, with a Chart, showing the Methods of Diffusion, by the Medical Officer of Health. Bristol: Bennett Brothers, Limited. 1897.
- Smith's Physician's and Surgeon's Visiting List for 1898. Fifty-second Year. London: Hazell, Watson & Viney, Limited.
- The South African Climate, by William C. Scholtz, M.D. Edin. With Eleven Illustrations. London: Cassell & Co., Limited. 1897.
- Archives of the Roentgen Ray, edited by W. S. Hedley, M.D., and Sydney Rowland, M.A. Vol. II, No. 2. London: The Rebman Publishing Company, Limited. 1897.
- Radiography in Marine Zoology, by R. Norris Wolfenden, M.D. With Thirty-six Illustrations and Fifteen Plates. London: The Rebman Publishing Company, Limited. 1897. (4s.)
- Abdominal Surgery, by J. Greig Smith, M.A., F.R.S.E. Sixth Edition. Edited by James Swain, M.S., M.D. Lond. Two Vols. Bristol: J. W. Arrowsmith. London: J. & A. Churchill. 1897.
- Sleep: its Physiology, Pathology, Hygiene, and Psychology, by Marie de Manacéine (St. Petersburg). London: Walter Scott, Limited. 1897. (3s. 6d.)
- On Cardiac Failure and its Treatment, with especial Reference to the use of Baths and Exercises, by Alexander Morison, M.D. Edin. London: The Rebman Publishing Company, Limited. 1897. (10s.)
- A Surgical Handbook for the Use of Students, Practitioners, House Surgeons, and Dressers, by F. M. Caird, and C. W. Cathcart. London: Charles Griffin & Co., Limited. 1897. (8s. 6d.)
- A Practical Text-Book of the Diseases of Women, by Arthur H. N. Lewers, M.D. Lond. Fifth Edition. London: H. K. Lewis. 1897. (10s. 6d.)
- A Text-Book of Special Pathological Anatomy, by Ernst Ziegler. Translated and Edited by Donald MacAlister, M.D., and Henry W. Catell, M.D. Sections IX-XV. London: Macmillan & Co. 1897. (17s. net.)
- Some Points in the Anatomy, Pathology, and Surgery of Intussusception, by D'Arcy Power, M.A., M.B. London: The Rebman Publishing Company, Limited. 1898. (4s.)
- Differential Diagnosis and Treatment of Coma. Arranged by George A. Huntly, M.D. (Paper, 1s.; Mounted on Cloth, 1s. 6d.; Mounted on Card and Varnished, 2s. 6d.) Weston-Super-Mare: Huntly Bros.

**GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR
THE FOUR WEEKS ENDING 18TH DECEMBER, 1897.**

	WEEK ENDING			
	Nov. 24.	Dec. 4.	Dec. 11.	Dec. 18.
Mean temperature, . . .	46·1°	38·2°	42·0°	42·9°
Mean range of temperature between day and night, . .	7·9°	11·3°	10·2°	12·3°
Number of days on which rain fell,	6	5	6	3
Amount of rainfall, . ins.	0·61	0·73	1·85	0·40
Deaths registered, . . .	263	265	288	289
Death-rates,	19·1	19·3	20·9	21·0
Zymotic death-rates, . . .	3·0	2·8	2·9	2·8
Pulmonary death-rates, . .	4·9	6·1	6·7	6·9
DEATHS—				
Under 1 year,	65	45	61	70
60 years and upwards, . .	44	53	62	50
DEATHS FROM—				
Small-pox, . . . . .	...	...	...	...
Measles,	9	11	8	8
Scarlet fever,	5	3	7	6
Diphtheria,	2	2	2	1
Whooping-cough,	15	16	14	16
Fever,	2	1	3	2
Diarrhoea,	8	6	6	5
Croup and laryngitis, . .	3	2	1	1
Bronchitis, pneumonia, and pleurisy,	51	57	65	74
CASES REPORTED—				
Small-pox, . . . . .	...	...	...	...
Diphtheria and membranous croup,	11	14	8	7
Erysipelas,	27	17	22	24
Scarlet fever,	67	61	64	82
Typhus fever,	6	6	...	1
Enteric fever,	9	8	13	5
Continued fever, . . . .	...	...	...	...
Puerperal fever,	3	...	3	...
Measles,*	158	143	180	249

* Measles is not notifiable.

THE
GLASGOW MEDICAL JOURNAL.

No. II. FEBRUARY, 1898.

ORIGINAL ARTICLES.

**A SERIES OF SPECIMENS ILLUSTRATIVE OF CERTAIN
CONGENITAL AFFECTIONS OF THE URINARY
APPARATUS.¹**

By **L. R. SUTHERLAND, M.B.,**

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Pathologist to the Royal Hospital for Sick Children,
Glasgow ; and

G. H. EDINGTON, M.D., C.M. (GLASG.), M.R.C.S. (ENG.), F.F.P.S.G.,
Surgeon to the Glasgow Central Dispensary ; Lecturer on Anatomy, Western
Medical School, Glasgow.

THE majority of the cases here recorded have occurred during the last few years in the Royal Hospital for Sick Children. To these have been added several specimens from the Pathological Museum of the Western Infirmary.

The cases illustrate some of the more important congenital affections of the urinary organs, and include examples of malposition and malformation of the kidney, unsymmetrical kidney, rudimentary development of one kidney associated with corresponding defective development of the generative organs, various degrees of fusion of the kidneys, and various forms of congenital hydronephrosis.

¹ Paper read, and specimens shown, at a meeting of the Glasgow Pathological and Clinical Society held on 8th November, 1897.

I. MALPOSITION AND MALFORMATION.

CASE 1.—*Malposition and malformation of right kidney.*—The right kidney, which was found lying at the brim of the pelvis, is greatly altered both in form and in relations (Fig. 1, p. 83). The shape is generally quadrilateral, the organ measuring 10 cm. vertically, 7.5 cm. transversely, and from 2 to 4 cm. antero-posteriorly. The inclination of the long axis of the mass is oblique, passing upwards and to the left. The posterior surface is flattened, showing a groove accommodating the right common iliac artery; the anterior surface shows four prominent lobules surrounding the hilum.

The upper edge of the mass is close to the bifurcation of the aorta; the lower edge beneath the bifurcation of the common iliac arteries. The *hilum* is anterior. The *pelvis* is small, being formed of two converging calices, which drain the right and left halves of the mass respectively. The *ureter* is normal.

The *left kidney* has a normal position, form, and relations. It measures 12 cm. vertically, 5.5 cm. transversely, and about 4 cm. antero-posteriorly. The *right kidney* is supplied by *two arteries* which arise separately from the anterior aspect of the aorta, about 6 mm. below the origin of the inferior mesenteric artery, and pass in grooves to the upper part of the hilum. The *left kidney* is also supplied by *two arteries*, which arise, the one immediately above the other, from the lateral aspect of the aorta at the level of the superior mesenteric artery. The *right kidney* shows *two veins* emerging one on either side of the hilum. The left passes upwards in front of the aorta to empty into the left renal vein, where the latter crosses the aorta. The right empties directly into the inferior vena cava, about 5 cm. below the left renal vein. Two veins drain the left kidney, passing across the front of the aorta into the vena cava. Microscopically examined, both kidneys present a normal structure.

Clinical particulars are wanting in this case.—(Pathological Museum, Western Infirmary).

CASE 2.—*Malposition and malformation of right kidney—Nephritis.*—The *right kidney* is represented by a somewhat quadrilateral mass, flattened from before backwards, and with its long axis vertical. It measures 10.25 cm. vertically, 6.75 cm. transversely, and 3 cm. antero-posteriorly. The surface is coarsely granular, and there is a cyst 7 mm. in diameter projecting from the right margin. The capsule was

very adherent. Posteriorly, the mass presents generally a

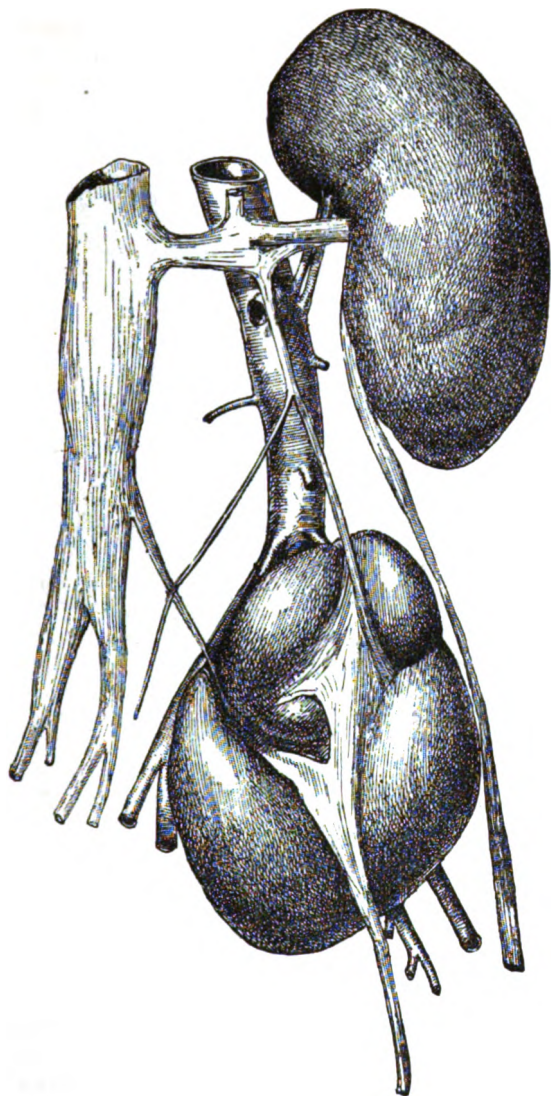


FIG. 1.

concavity. Anteriorly, the surface is markedly lobulated, showing three distinct lobules, a right and left superior, and

an inferior (Fig. 2). The upper edge of the mass is about 3.5 cm. above the level of the aortic bifurcation, the lower extends downwards to a point about 6.5 cm. below the bifurcation. The inner edge of the mass lies at the right side of aorta, in front of the vena cava.

The *hilum* is anterior, and somewhat irregular. The *pelvis*,

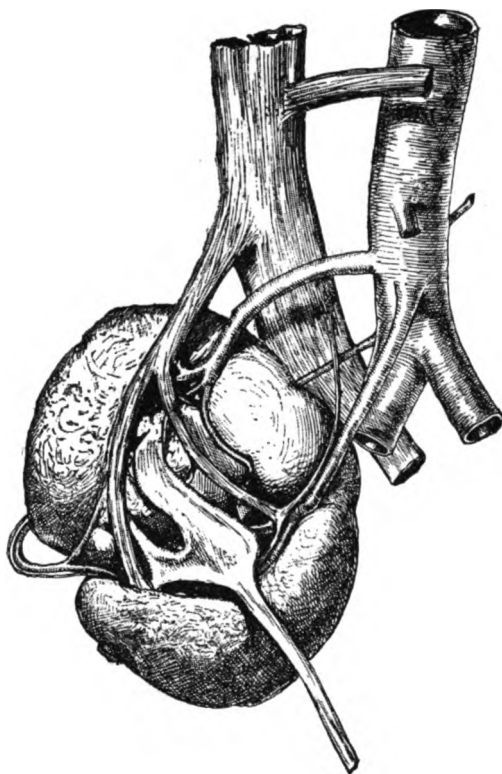


FIG. 2.

which is small (measuring from apex to base 1.5 cm., and having a maximum width of 1.75 cm.), is formed by six calices, of which the two lower are hidden behind the pelvis, and enter it separately. At the upper end of the hilum there are two calices which join before passing down to the pelvis, and on right side the remaining two join and pass obliquely downwards and inwards to the pelvis. The *ureter*, somewhat

narrowed at its origin, passes from the pelvis downwards and inwards, lying in a shallow groove on the anterior surface of the lower lobule.

The mass is supplied by three *arteries*. There are two on the anterior aspect, measuring, the upper nearly 7 mm., the lower 5 mm. in diameter, and springing from the aorta 3 cm. and 1.5 cm. respectively above bifurcation. These enter the upper and lower extremities of the hilum. On the right side of the aorta, and just at the origin of the right common iliac artery, is a third artery of small size, having an average diameter of 2 mm., which runs outwards across the back of the mass to the outer edge, where it bifurcates in the notch between lower and right upper lobules.

The *veins* converge from all parts of the hilum into right and left vessels which unite to form a single trunk about 2.5 cm. below the upper edge of the mass. This trunk empties into the vena cava about 6 cm. above the junction of common iliac veins.

In addition, a small vein accompanies the third artery round the back of the mass, and another leaves the notch between lower and left upper lobules, and passes round the inner edge of mass. Both of these join the vena cava separately.

Microscopically examined, this kidney presents the characters of interstitial nephritis. Fibrous and cellular areas of a wedge-shape occupy the cortex. There is marked atrophy of the tubules with fibrosis and sclerosis of the Malpighian bodies. Occasional hyaline casts are present, and there is well-marked endarteritis.

Clinical particulars are wanting in this case.

II. UNSYMMETRICAL KIDNEY.

CASE 3. *Unsymmetrical kidney—Entire absence of right kidney—Nephritis.*—The kidney forms a quadrilateral mass, measuring 5 cm. vertically, 6.5 cm. transversely, and 3 cm. antero-posteriorly. It presents a deep notch antero-inferiorly. The anterior aspect of the mass is distinctly lobulated, while the convex posterior surface shows a number of superficial furrows. The hilum is on the anterior aspect of the organ. The pelvis is small, being formed of two converging tubes; and the ureter, 6 mm. in diameter, lies in the notch, and opened by a considerable orifice on the left side of the trigone.

An artery of some size descends in front of the upper part of the mass, and bifurcates in the upper part of the hilum (Fig. 3, p. 86). The exact vascular relations are not preserved.

Microscopically the kidney shows the appearances of parenchymatous nephritis, with interstitial round-celled infiltration, especially round the glomeruli.

The specimen was removed *post-mortem* by Dr. J. F. R. Gairdner, in the Belvidere Fever Hospital, from a male infant, aged 1 year and 10 months, who died of scarlet fever complicated with acute nephritis. The mass was found occupying the position of the left kidney. No trace of right kidney or of right ureter could be found. There was no trace of an orifice on the right side of the trigone. No abnormality in the generative organs was noted. Both testicles were well developed, and were fully descended.

Note.—The appearance of the mass at first sight suggests a fusion of two kidneys at their internal margins, the fusion

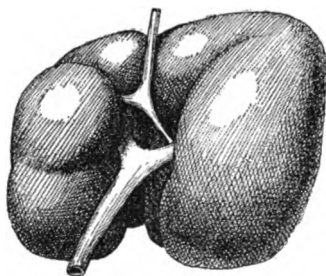


FIG. 3.

involving the upper three-fourths of these margins, and resulting in the production of an "inverted horse-shoe." The single pelvis, the single ureter, and the lateral situation of the mass point rather in the direction of an unsymmetrical kidney.

III. RUDIMENTARY KIDNEY.

CASE 4. *Unilateral defective development of genito-urinary organs—Malposition of rudimentary kidney—Nephritis.*—The specimen consists of both kidneys, ureters, bladder, and vessels, with right vas deferens and vesicula seminalis.

The *left kidney* is represented by a globular thin-walled *cyst*, measuring 3.5 cm. in diameter. This was tensely filled with a clear dark-brown fluid which, chemically examined, contained urea. The upper part of the cyst shows a small amount of solid tissue, measuring roughly 2 cm. by 1 cm. This is separated at its edges from the cyst by a definite

furrow. This solid tissue was found microscopically to consist of distorted renal tubules in an abundant fibrous stroma. The cyst occupied the middle line in front of the sacral promontory, and was freely movable suspended by its vessels.

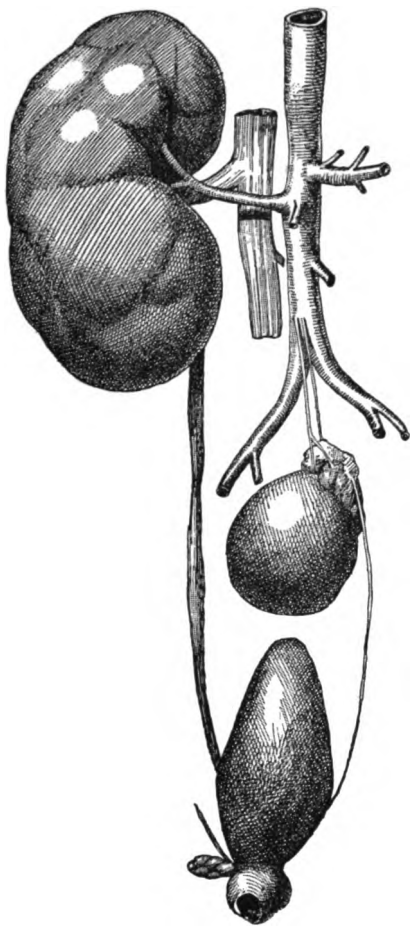


FIG. 4.

The *left ureter* is represented by an attenuated cord-like structure arising from the furrow at the upper extremity of the cyst. No lumen can be discovered in this structure. After a short course the ureter passes to the left angle of the trigone, where there is a slight depression; there is no definite

orifice. The *cyst* is suspended from the aorta by *two vessels*. These arise from the anterior aspect of the aorta, to the right of the middle line, and at a distance of about 1 cm. below the origin of the inferior mesenteric artery. They enter the cyst at the furrow above mentioned. The venous connections are not shown in the preparation.

The *right kidney* was normal in situation. It is hypertrophied, measuring 9.5 cm. vertically, 5 cm. transversely, and 4 cm. antero-posteriorly (compensatory hypertrophy). The pelvis and ureter appear normal, the latter, however, showing slight dilatations in its course. It opens into the bladder by a considerable orifice. The vascular connections are normal.

The *bladder* is small and elongated in a vertical direction. The *urethra* was normal throughout.

Both *testicles* were in the scrotum. The *left* was *slightly smaller* than the right. The right vas deferens and vesicula seminalis presented a normal appearance. The *left vas deferens* at its origin from the epididymis presented normal characters, but dwindled progressively towards the bladder, ending in a thread-like fibrous structure at some little distance from the base of the bladder. The *left vesicula seminalis* is entirely wanting.

Both suprarenal bodies were present; the right in its usual situation; the left flattened out on the diaphragm, lying somewhat more external than usual.

The specimen was removed *post-mortem* from a child, 3 years of age. Death resulted from broncho-pneumonia. Albumen was present in large amount in the urine, only, however, for six days prior to death.

Microscopically examined, the right kidney shows the following:—Desquamated epithelium in tubules of the cortex, with marked granularity, fatty degeneration, and defective nuclear staining; epithelial proliferation around the glomeruli; very numerous hyaline and finely granular tube-casts; interstitial changes slight.—(Royal Hospital for Sick Children).

IV. FUSION OF KIDNEY.

CASE 5.—*Horse-shoe kidney in a female child*.—The two kidneys, each of which measures roughly 9 cm. from above downwards, are united by a band of renal tissue at their lower extremities. This isthmus measures 1.3 cm. vertically, and 3 mm. antero-posteriorly. It lies at the bottom of a deep vertical fissure. The posterior aspect of the specimen is smooth, the anterior lobulated. In both kidneys the *hilum* is

antero-internal, and from the *pelvis* the *ureters* descend, occupying grooves on the anterior surface of their respective kidneys. The *right pelvis* is normal. The *left pelvis* passes downwards and outwards.

The *right and left renal arteries* arise from the aorta below the origin of the superior mesenteric artery and pass to the upper extremity of each hilum. A small artery enters the lower end of each hilum, springing directly from the aorta about 2 cm. below the origin of the superior mesenteric artery (Fig. 5).

The left kidney is drained by numerous branches emptying

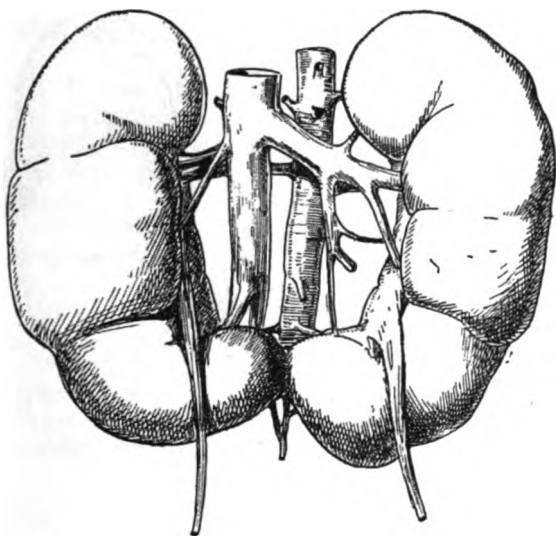


FIG. 5

into the *left renal vein*, which has a normal course. The right kidney has its veins entering the vena cava in three branches, one above the isthmus and two at the level of the right renal artery. The isthmus drains below by three branches which unite and enter the vena cava in a downward direction. The suprarenal bodies are normal. Microscopically examined, both halves of the horse-shoe and the isthmus consisted of normal renal tissue.

The specimen was removed *post-mortem* from a female child, aged 5 years and 10 months, who died from tubercular meningitis. The case is recorded in full in *Glasgow Medical Journal*, March, 1894.—(Royal Hospital for Sick Children.)

CASE 6.—*Horse-shoe kidney in a boy 17 years of age.*—The two kidneys, which measure from above downwards, right 11 cm., left 10 cm., are united at their lower extremities by a broad and thick isthmus of renal tissue, measuring from above downwards 4 cm., from before backwards 2 cm. The posterior aspect of the specimen is smooth, contrasting with the lobulated anterior aspect. The isthmus is separated from each kidney by a deep furrow, and has a general inclination upwards and to the left, as if completing the reniform outline of the right kidney (Fig. 6). The hilum of the right kidney faces forwards, so that a considerable amount of lobulated renal tissue projects

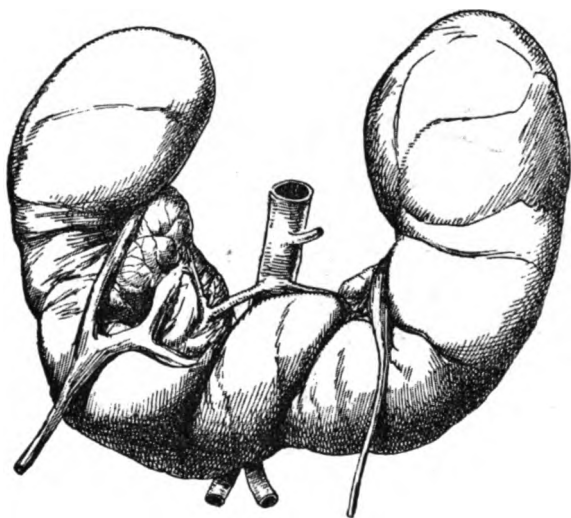


FIG. 6

behind it towards the middle line. The right pelvis is small, being formed by three converging tubes, the downward and outward inclination of which is continued by the ureter. The hilum of the left kidney looks inwards, except at the extreme lower end, where it looks forwards. The left pelvis is also small. It shows no subdivision. The left ureter passes more directly downwards than the right. There are two branches from the aorta passing in grooves at the upper margin of the isthmus to enter the lower extremity of the hilum. The arterial supply of the upper part of the kidney has not been preserved. The suprarenal bodies were normal in form and situation.

The specimen was removed *post-mortem* from a boy, aged 17 years, who died as a result of extreme hydrocephalus.

Microscopically examined, the fused kidney shows well-marked hyperæmia, especially in the left half. There is no evidence of nephritis.—(Pathological Museum, Western Infirmary.)

CASE 7.—*Horse-shoe kidney in an adult male—Nephritis.*—The two kidneys measure from above downwards, left 12·5 cm., right 11·5 cm. respectively, and are united at their lower extremities across the middle line by an isthmus of renal

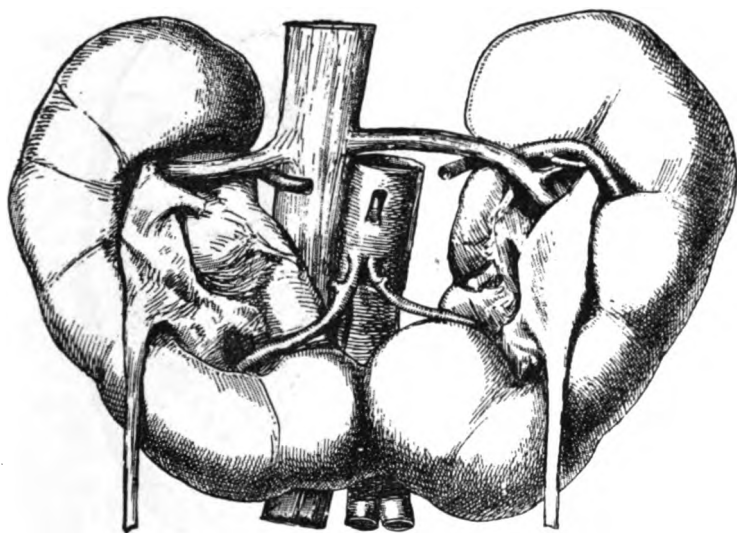


FIG. 7.

tissue having a vertical measurement of 2·5 cm. The isthmus lies at the bottom of a deep anterior vertical groove. The anterior surface of each kidney shows slight lobulation. The hilum of each kidney is entirely on the anterior aspect, so that there is a prominent piece of lobulated renal tissue projecting behind towards the middle line, and measuring laterally about 2 cm., and from before backwards about 1·5 cm. (Fig. 7).

On each side the pelvis lies in the hilum, but the ureter springs from the external border of the pelvis, and not from the internal as in the normal kidney. In connection with each pelvis five separate calices are shown, most of which lie between prominent lobules of renal substance.

There are two sets of renal arteries, an inferior entering the lower end of the hilum and springing separately from the anterior aspect of the aorta a little below the origin of the inferior mesenteric artery, and a superior, entering the upper end of the hilum. Their connection with the aorta has been severed. Each renal vein joins the vena cava at the level of the upper end of the corresponding hilum. The aorta and vena cava pass behind the isthmus.

The specimen was removed *post-mortem* from a man, aged 67, who for thirteen years before death suffered from recurrent

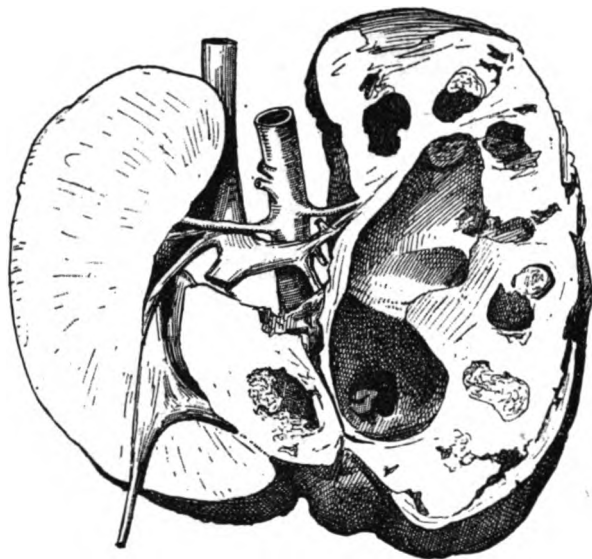


FIG. 8.

attacks of renal dropsy associated with albuminuria. Latterly diarrhoea developed, with a certain tendency to delirium, but no convulsions.

The kidney showed evidence of parenchymatous and interstitial nephritis on microscopical examination. There was slight hypertrophy of the left ventricle.—(Pathological Museum, Western Infirmary.)

CASE 8.—*Horse-shoe kidney in a male child—Pyonephrosis in one half—Perinephric abscess.*—The conjoined kidney is shown on section, and the two halves are seen to be joined by

a broad isthmus of renal tissue (Fig. 8, p. 92). The left side of the specimen is seen to be greatly enlarged. The pelvis is dilated, and there are cavities representing dilated calices which largely replace the renal tissue and still contain remains of pus. The left half of the isthmus shows a similar lesion. The right side of the specimen and corresponding portion of the isthmus are normal. In addition, there was an abscess cavity outside the left kidney communicating with the internal cavities.

Microscopically examined, the lesion in the kidney presented the characters of an ordinary pyonephrosis. There was no evidence of tubercle.

The specimen was removed *post-mortem* from a male child, aged 3 years. Pus had been observed in the urine for two months before operation. An abscess in the lumbar region was opened, and continued discharging till death.

Microscopically examined, the right half of this fused kidney presents a normal structure.—(Royal Hospital for Sick Children.)

CASE 9.—Fusion of kidneys in a male infant—Hypopadias—Umbilical hernia sac.—The kidneys form a mass of approximately reniform outline, measuring 6.5 cm. vertically, 3 cm. laterally, and 2.5 cm. antero-posteriorly. The anterior surface shows distinct lobulation; the posterior surface is smooth (Fig. 9, p. 94).

The *hilum* faces anteriorly or antero-internally, a small amount of renal substance being situated towards the middle line behind. Emerging from the hilum are two distinct simple *pelves*, one above the other. This is corroborated on making a section of the mass. The lower *ureter* passes to the right side of the trigone, and is crossed anteriorly by the upper ureter on its course to the left side of the trigone.

There are *three sets of renal arteries*—(1) An upper, entering the upper end of the hilum; (2) a lower, entering the lower end of the hilum; and (3) a third vessel supplying the intermediate parts. Branches 1 and 3 arise from the lateral aspect of the aorta, one above the other at the crossing of the renal vein. Branch 2 arises from the anterior aspect of the aorta to the right and below the origin of the inferior mesenteric artery. The *renal vein* is formed mainly by three tributaries emerging from the upper and middle portions of the hilum. It crosses the aorta in the normal situation of the left renal vein. There is entire absence of corresponding renal vessels on the right side.

The specimen shows further the obliterated hypogastric

arteries, and a portion of persisting urachus likewise obliterated. The *bladder* is normal (shown turned downwards and forwards in the figure).

The specimen was removed *post-mortem* from a male infant, aged 2 months, who died of acute broncho-pneumonia.

The "fused kidney" occupied the left side. There was entire absence of kidney on the right side. The right *supra-renal body*, however, was present, as shown in preparation,

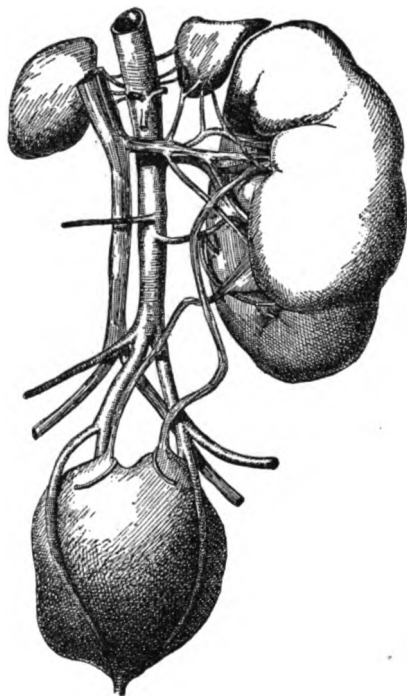


FIG. 9.

but markedly flattened out on the under surface of the diaphragm. The left supra-renal body occupied its normal position. Both supra-renal bodies were supplied by vessels arising directly from the aorta, the left receiving in addition two twigs from the highest renal artery. The left supra-renal vein emptied into the left renal vein, the right supra-renal vein directly into the inferior vena cava. Microscopic examination shows a normal structure. The *vasa deferentia*, vesiculi

seminales, and testes were normal. There was fairly well-marked *hypospadias*. There was also a small *umbilical hernia sac*.

Note.—The relations of the ureters to one another, and the origin of the lowest renal artery, are compatible with the possibility of the lower half of the mass having occupied a position to the right of the median line.—(Royal Hospital for Sick Children).

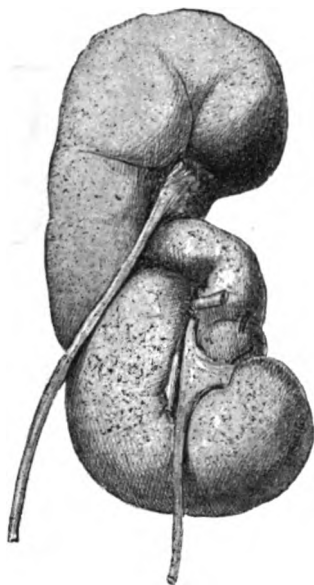


FIG. 10.

CASE 10.—*Fusion of kidneys in a female child.*—The fused mass, which measures 11·5 cm. in length, presents an elongated reniform outline, and is possibly formed by the superposition of one kidney on the other, as represented in the accompanying sketch (Fig. 10).

The anterior surface of the mass is irregularly lobulated; the posterior surface is smooth.

There are two distinct *pelves*, one above the other, each in its own hilum. The upper *hilum* presents antero-internally; the lower anteriorly.

The *ureters*, which are of normal dimensions, pass downwards and outwards from the corresponding *pelves*, and lie in

grooves on the anterior surface of the mass. The upper entered at the right, the lower at the left angle of the trigone. The *bladder* was normal. The vascular relations were not fully determined.

The suprarenal bodies were normally disposed. An examination of the generative organs was not made. Microscopic examination of the fused mass shows normal renal tissue.

The specimen was removed *post-mortem* from a girl about 7 years of age. The mass occupied the right renal region, and

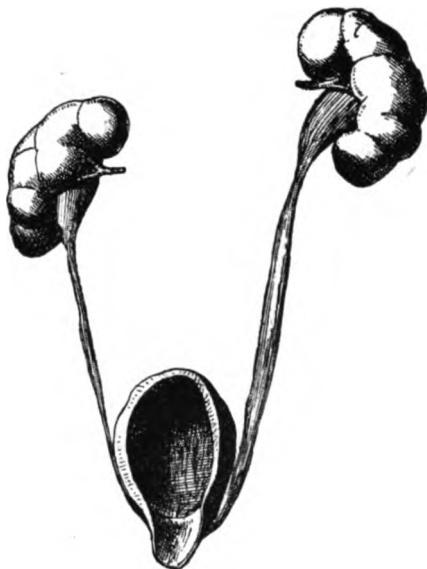


FIG. 11.

was distinctly palpable in life (G. H. E.) There was no trace of renal tissue found on the left side.

Note.—The appearances suggest an incomplete union of two kidneys—the smaller (lower part of the mass) representing the left; the larger (upper part), the normally placed right kidney.

From the relations of the lower ureter and pelvis inversion of the left kidney may possibly be inferred, as well as coalescence with the anterior surface of the inferior extremity of the right kidney.—(Royal Hospital for Sick Children.)

V. CONGENITAL HYDRONEPHROSIS.

CASE 11.—*Hydronephrosis with dilatation of ureter in an anencephalous fœtus.*—The kidneys are about equal in size, measuring 4 cm. in length. They show distinct lobulation of their anterior surfaces, while their convex posterior surfaces are smooth (Fig. 11, p. 96). There is slight dilatation of the pelvis, but the calices are normal on the right side. The ureter is apparently normal in diameter, but is considerably shorter than the left. On the left side there is distinct hydronephrosis. The calices are dilated, and there is some atrophy of the pyramidal substance.

There is a more or less uniform dilatation of the left ureter, the calibre of which is at least three times greater than that of the right. Its junction with the pelvis is marked by a slight constriction. The opening of the ureter in the bladder is slightly larger on the left side.

The bladder itself presents some hypertrophy without dilatation.

There was no obstruction in any part of the urethra.

The generative organs were normal.

The anencephalous fœtus was of the female sex, and measured 40 cm. in length.

CASE 12.—*Double hydronephrosis—Dilatation of ureters—Hypertrophy of bladder in an anencephalous fœtus.*—The kidneys are about equal in size, measuring 4.5 cm. in length, and retain the reniform outline (Fig. 12, p. 98). There is well-marked lobulation present, particularly on the anterior aspect of the right kidney. There is antero-posterior flattening of the left kidney.

Both pelves, with their corresponding calices, are markedly distended, and there is distinct atrophy of the renal papillæ. The pelves are infundibuliform, and their junctions with their ureters are marked by a distinct constriction.

The ureters are both uniformly dilated and hypertrophied. There is no obstruction at their vesical extremities. The bladder is distinctly hypertrophied, with moderate dilatation. The urachus is well-marked, and its cavity communicates with that of the bladder. The urethra presented no obstruction whatever. The generative organs were normal.

The anencephalous fœtus was of the female sex, and measured 48 cm. in length.

CASE 13.—*Extreme dilatation of ureters—Extreme hydro-nephrosis—Extreme dilatation of bladder.*—The specimen shows kidneys, ureters, bladder, prostatic and membranous urethra (Fig. 13, p. 99). There is an extreme degree of atrophy of the kidney substance.

The *left kidney* preserves the reniform outline, and shows anteriorly traces of lobulation; posteriorly the surface is smooth. A greatly dilated funnel-shaped pelvis occupies the entire hilum.

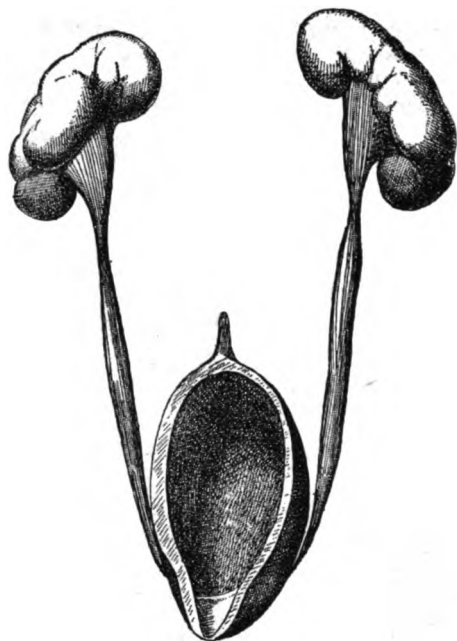


FIG. 12.

The *right kidney* shows only a thin incomplete rind of renal tissue. The pelvis, which had a direction *downwards and outwards*, is smaller than that of the left side, and results from the coalescence of two superposed greatly distended structures apparently representing fused calices.

The *ureters* are greatly distended, presenting the appearance of small intestine, and having a maximum diameter of 3 cm. The dilatation is most marked about the lower half, and the ducts narrow suddenly near their termination. The left presents a distinct though relative narrowing at its origin

from the pelvis. A very much less degree of narrowing is noted in the corresponding situation on the other side. There is no obstruction at the vesical orifices, which readily admit a No. 3 catheter.

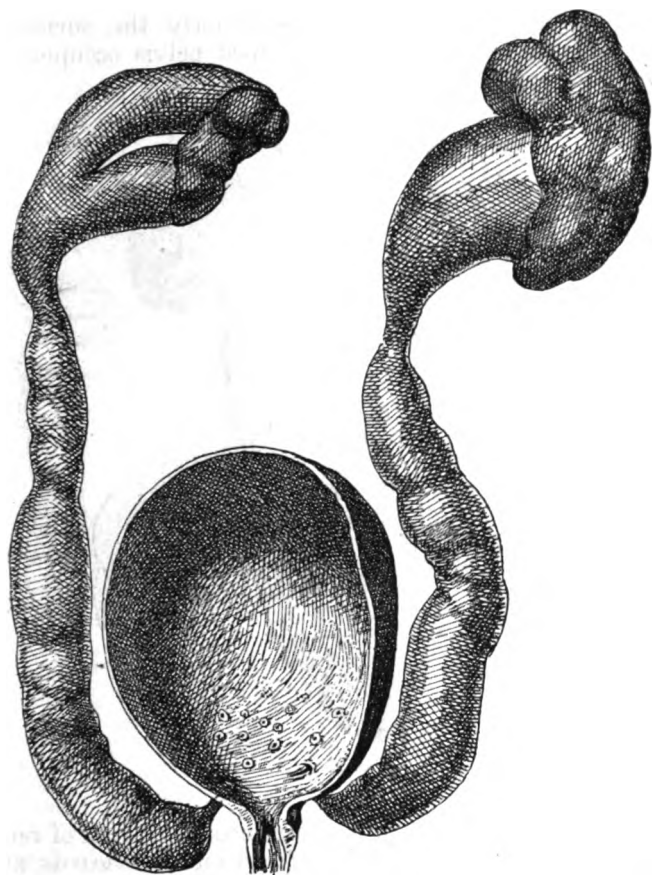


FIG. 13.

The *bladder* is highly distended, measuring 12 cm. from above downwards, and 9 cm. from side to side. Its walls are thinned. There is no definite pouching, but certain shallow depressions in the mucous membrane of the base of the bladder might be interpreted as commencing diverticula. This is confirmed on microscopical examination. There was no obstruction

in any part of the *urethral canal*. A No. 5 catheter readily entered the *meatus*. The *prepuce* was long, but there was no *phimosis*. *Suprarenal bodies* and *generative organs* were normal.

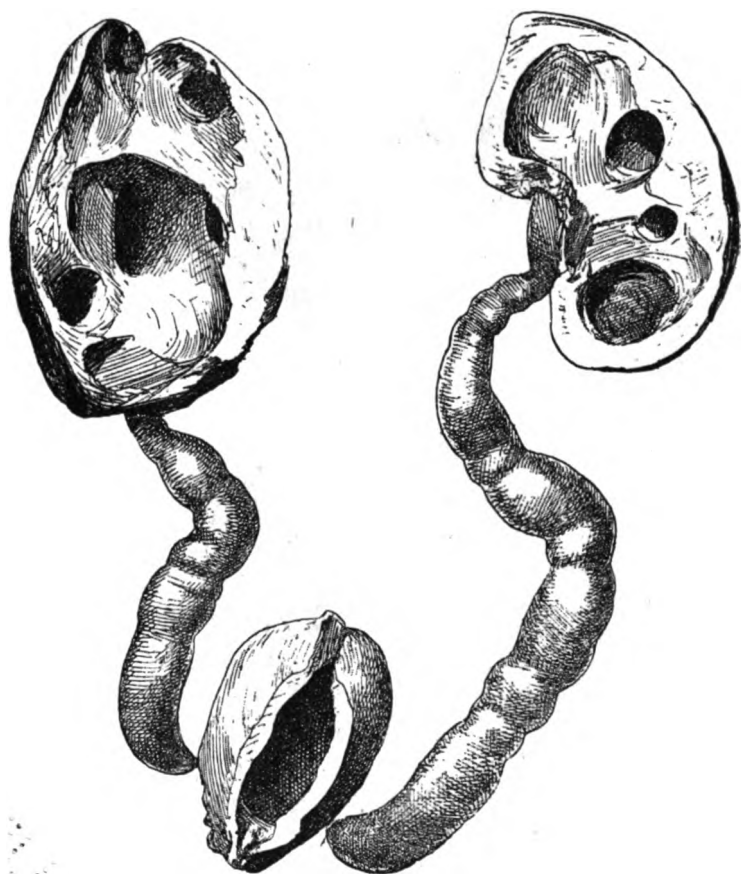


FIG. 14.

The parts were removed *post-mortem* from a male child, aged 1 year and 8 months. A somewhat vague history of abdominal distension and occasional incontinence was all that could be obtained from the parents.—(Royal Hospital for Sick Children.)

CASE 14.—*Extreme dilatation of ureters—Hydronephrosis—Hypertrophy of bladder.*—The specimen shows both kidneys and ureters, the bladder, and prostatic urethra (Fig. 14, p. 100).

The *kidneys* show marked distension of their pelves and calices, with atrophy of the renal substance. They contained blood-stained muco-purulent material, and presented on section the characters of pyelonephritis.

Both *ureters*, which are strikingly convoluted, show marked dilatation with thinning of their walls. The diameter of the tubes is at parts at least 2.5 cm. There is relative narrowing at the upper and lower extremities of both ureters, but no evidence of obstruction.

The *bladder*, which was contracted, presents a thickening of its walls averaging 1.2 cm. in extent. No obstruction was found in any portion of the *urethra*.

The *external meatus* was, however, narrower than normal, and there was moderate phimosis with adherent prepuce.

The specimen was removed from a male child of 5 years of age, who for three and a half years had suffered from urinary symptoms.

For full details of case, see *Glasgow Medical Journal*, vol. xlii, p. 131.—(Royal Hospital for Sick Children.)

CASE 15.—*Extreme dilatation of ureters—Hydronephrosis—Extreme dilatation of bladder with hypertrophy—Interstitial nephritis—Vascular abnormalities.*—The *left kidney*, which retains in great part its normal outline, shows lobulation of its anterior surface. The *hilum* is antero-internal. The *pelvis* is funnel-shaped, and separated by a relative constriction from its dilated ureter. The calices are distended, and there is distinct atrophy of the renal tissue, which in some places has a thickness of only 4 mm.

The *right kidney* is considerably deformed, having a roughly triangular shape, with base downwards. The *hilum* is postero-internal. The *pelvis* shows slight dilatation, gradually expanding into the dilated ureter. The calices are dilated, and there is slight atrophy of the renal substance.

The *ureters*, especially the left, are convoluted and greatly dilated, attaining at parts a diameter of over 2.5 cm. They terminate in widely patent orifices in the trigone. There is striking dilatation of the *bladder*, which measures 17 cm. from above downwards, and 10 cm. from side to side, and there is also distinct hypertrophy of its muscular coats, which attain a thickness of 3.5 mm. (Fig. 15, p. 102). No obstruction whatever is found in the *urethra*. A No. 5 catheter is caught at the

external meatus. A No. 8 catheter passes readily through the rest of the urethral canal. The *prepuce* was long, but could be retracted readily. The generative organs were normal.

Vascular abnormalities are present in the specimen. The *left kidney* is supplied by two arteries springing from the

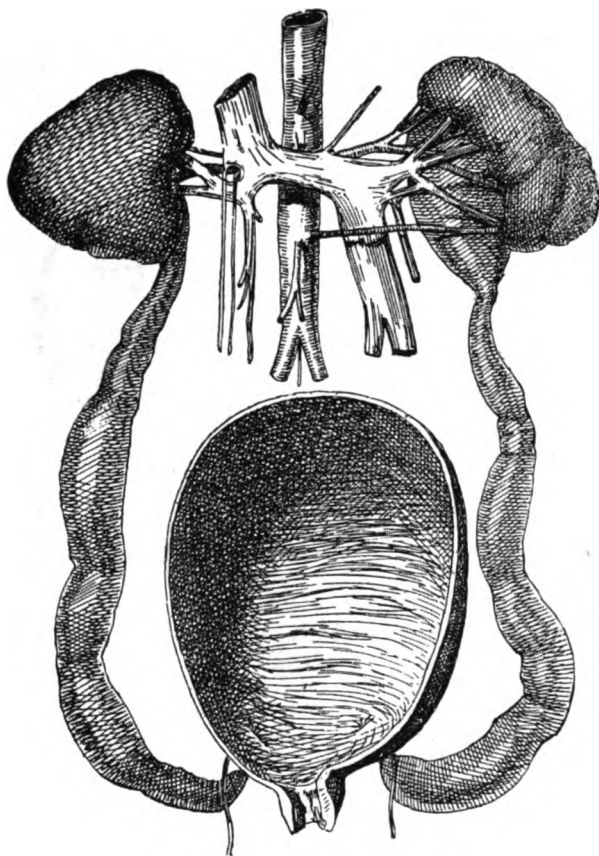


FIG. 15.

aorta, about the level of the superior and inferior mesenteric arteries respectively. The *right kidney* is supplied by a single artery arising from the aorta, also at the level of the superior mesenteric artery. The vena cava passes up on the *left side* of the aorta, its normal position on the right side being occupied by a considerable vessel which empties into the right

renal vein. After receiving the left renal vein it turns to the right, crossing the aorta below the superior mesenteric artery. After its crossing it receives the right renal vein, and continues upwards in its normal course.

The specimen was removed *post-mortem* from a boy, aged 11½ years, who died with symptoms of nephritis with uræmia. The kidneys presented, on microscopic examination, a striking degree of interstitial nephritis. An almost universal interstitial infiltration of round cells was found in addition to marked sclerosis of the Malpighian tufts and endarteritis.—(Royal Hospital for Sick Children.)

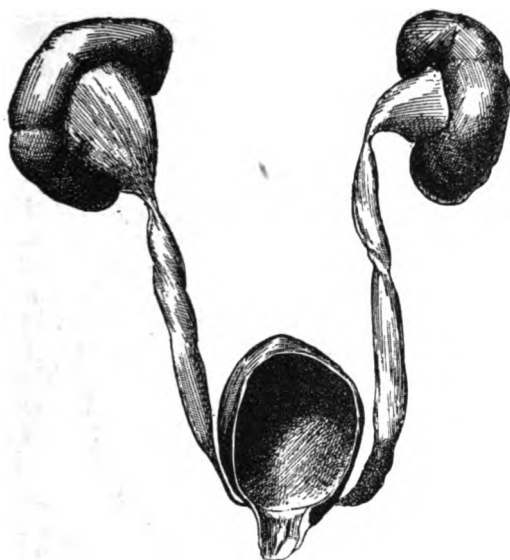


FIG. 16.

CASE 16.—*Double hydronephrosis and dilatation of ureters in a case of partial atresia recti—Meckel's diverticulum.*—Both kidneys present traces of foetal lobulation on their anterior surfaces (Fig. 16.)

The *hilum* on both sides is situated antero-internally, and is occupied by a dilated funnel-shaped pelvis, the dilatation being more marked on the right side.

The *calices* are dilated, and there is a small amount of atrophy of the renal substance of the right kidney.

The convoluted *ureters* are markedly distended, having a maximum diameter of 1.2 cm. The lumen of each is very distinctly narrowed at its junction with the pelvis, and also for a short distance above its vesical termination. This is particularly the case on the right side. The vesical orifices of the ureters fail to admit a No. 1 catheter. On the right side pelvic dilatation predominates, while on the left side the distension of the ureter is the leading feature.

The *bladder* appears normal. There was no obstruction in any part of the *urethra*. The prepuce was long, but there was no phimosis. The generative organs were normal.

The parts were removed *post-mortem* from a male infant aged 1 month. A partial atresia of the rectum, 3 cm. above the anal margin, was found. There was extreme dilatation of the bowel, with thickening of its muscular coats above the constriction, the greatly distended bowel completely filling the pelvic cavity posteriorly. A small Meckel's diverticulum was found projecting from the ileum, 30 cm. above the ileo-cæcal valve.—(Royal Hospital for Sick Children.)

CASE 17.—*Hydronephrosis of peculiar form—Ureter entering pelvis at an acute angle.*—The preparation shows a very large cyst which contained 1,300 cc. of fluid, and represents greatly dilated pelvis of kidney. This cyst is attached to the lower and anterior aspect of the kidney, the vessels passing to the organ running along its upper border, Towards the kidney there are six large rounded apertures which represent calices much less dilated than the pelvis, and these apertures communicate with cavities inside the kidney. The uppermost of these cavities is of considerable dimensions, but in the case of all of them there is a considerable amount of kidney-substance between them and the surface.

The ureter, into which a probe has been passed, is found to enter the dilated pelvis near its inferior part at an acute angle, traversing the wall of the cyst for some distance and opening by a slit-like aperture. The ureter is not dilated, and its aperture is not unduly narrow.

The other kidney was normal in size, weighing about 170 grms. This is noteworthy in connection with the fact that in the affected kidney there was still a considerable amount of kidney tissue remaining as mentioned above.

The specimen was removed from a woman, aged 45, who had suffered from a tumour in the right lumbar region for twelve years.—(Pathological Museum, Western Infirmary. See Dr. Coats, *Glasgow Medical Journal*, vol. xxxv, p. 344.)

CASE 18.—*Extreme hydronephrosis—Ureter entering pelvis at an acute angle.*—The external outline of the kidney is greatly enlarged, the organ measuring 16·5 cm. from above downwards. As shown in the preparation, the pelvis is greatly dilated, measuring 9 cm. from above downwards, and 6·5 cm. transversely. It communicates with a series of large compartments, which represent greatly dilated calices, and which, in some places, extend close to the surface, the remaining kidney tissue forming simply a thin rind. The ureter is not dilated, and it enters the pelvis at an acute angle, about 2 cm. above the lower extremity of the latter. The pelvis is not elongated towards the ureter, and the orifice, into which a piece of whalebone has been passed, is even smaller than normal. From the position of the ureter, the orifice would be valved when the pelvis was full.

The other kidney was considerably enlarged, weighing about 245 grms., but otherwise normal (compensatory hypertrophy).

The patient, a man, aged 53, was affected with symptoms of acute rheumatism and pneumonia with pleurisy. There is no note of renal symptoms during life.—(Pathological Museum, Western Infirmary. See Dr. Coats, *Glasgow Medical Journal*, vol. xxxv, p. 344.)

CASES FROM THE GLASGOW ROYAL INFIRMARY DISPENSARY.

By T. K. MONRO, M.A., M.D.,

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Glasgow Royal Infirmary; formerly Pathologist to the
Victoria Infirmary, Glasgow.

(Continued from p. 97, vol. xlvii.)

CASE 5. *Syphilitic pseudo-paralysis—Rapid recovery under treatment.*

A boy, aged 9 weeks, was brought to the Dispensary on account of loss of power in the right arm of eight days' duration, and in the right leg since the preceding night. There seemed to be a little power still preserved to the right hand, and the plantar reflex and sensation were preserved. A skin eruption had been present on the right shoulder and at the anus for a week. In other respects the child appeared healthy. There was an undoubted history of the mother getting infected by her husband shortly before the birth of

this child. She had suffered from a bubo, which required to be opened. There was one older child; no miscarriages. One-sixth of a grain of calomel twice daily was ordered for the child, and the mother was treated with perchloride of mercury and iodide of potassium. Nine days afterwards it was noted that the arm and leg were quite well, whilst the rash was much improved.

CASE 6. Hemiplegia, probably due to syphilitic vascular disease, accompanied by maniacal attack—Complete recovery from both motor and mental symptoms.

A hole-borer, æt. 23, was first seen on 28th May. He had enjoyed perfect health until the evening of the 24th, when he was on a chain at the gymnasium and fell upon his left side. He did not lose consciousness altogether, but he felt dazed for some time. Next morning his father noticed the weakness of the left arm and leg, and the escape of saliva from the mouth. There were no convulsions or vomiting. There was frontal headache on the mornings of the 27th and 28th, but never before. Paresis of the left upper limb and of the muscles at the side of the mouth and around the left eye was noted at the time of his first visit to the Dispensary, but the left eye could be completely closed, and some gripping power was retained by the left hand. Patient complained of weakness in the left leg, but this was not shown by the gait. Speech was somewhat affected, but the movements of the eyes and of the tongue, and sensation were normal. O.E. normal.

The heart was normal. Patient had rheumatism for nine months when about 16 years old, but this did not keep him from working. He never had scarlet fever or measles, and, indeed, apart from the rheumatism just referred to, seems always to have enjoyed good health. All venereal disease was denied, but exposure to the risk of infection was admitted.

The day after he took ill he gave evidence of mental alienation. He was to conduct his mother to some place on the south side of the river, and instead of taking the shortest way he led her by a most circuitous route, which greatly lengthened a journey made under most unfavourable climatic conditions. Later on, however, he became distinctly excited, and his mother noted his rolling eyes. When his mother dressed him (she said he had at that time neither the sense nor the power to dress himself) he would immediately take off his clothes, and some of them he would try to put on in a wrong way. He called his parents by bad names. He would not sit still "night nor day." He would jump right into the air, and on several

occasions he rushed across the room at the wall and struck it with his right hand. (He has since explained that in his illness he fancied he saw men squaring at him to fight.)

Patient was treated for a time by iodide, and afterwards by bromide of potassium, and steady recovery took place. By the end of June he complained only of a little stiffness about the knee, a dazed feeling on first rising in the morning, and of being easily rendered nervous. He came back in November to report himself perfectly well, mentally and physically.

Remarks.—The diagnosis in this case was tolerably certain. The sudden onset was proof of a vascular lesion, and, as non-fatal hæmorrhage does not occur at patient's age, the lesion was obstruction and not rupture. At patient's age this almost always means either embolism or syphilis; and as endocarditis, or any recent disease that might be associated with endocarditis, was absent, and the risk of venereal infection was admitted, syphilis was the probable cause.

The iodide was given, of course, not to cure the hemiplegia, but to cure the vascular disease to which the hemiplegia pointed. The fact that complete recovery took place in no way supported the diagnosis of syphilis; it simply showed that the lesion had not destroyed the part of the internal capsule involved, but had only temporarily interfered with its functional capacity. The vascular obstruction gave rise to a softening in the neighbourhood of the capsule.

CASE 7. Angina pectoris with unusual features (distribution of pain, intense desire to urinate) in subject of cardiac disease—Great improvement under treatment.

Patient was a labourer, aged 40, who came to the Dispensary on 11th May. He had not been in good health for the last six months, and had to stop work in March on account of painful attacks involving the front of the chest, and at the same time the left eyebrow and the right upper limb down to and including all the fingers of the right hand. Almost invariably when the pain came on, he felt compelled to pass water, and until the bladder was evacuated, he had a sense of pain and heat in the urethra and lower part of the abdomen. This uncontrollable desire to pass water, and the widely distributed pain with which it was associated, were readily brought on by stooping, or by walking for a few minutes, but not in any other way, and they passed off on sitting or standing still.

There were well-marked evidences of aortic obstruction and regurgitation, and less certain signs of some mitral regurgita-

tion. Fifteen years ago, patient was laid up with rheumatism, and twelve years later he was confined to bed for a time with what was regarded as a left-sided pleurisy.

The treatment ordered was the official solution of trinitrin in one-drop doses thrice daily, and in a week patient reported that he was free from pain in the eyebrow and from the urinary trouble, whilst the pain in the fingers was less severe. The nitroglycerin was increased from time to time, the pain tending to limit itself to the chest and right elbow. Iron and strophanthus were afterwards added to the trinitrin, and in a few days (29th June) patient, though doing some light work, reported himself as in better health than he had enjoyed for a year past.

Note.—The desire to urinate, while very exceptional as an element in the anginous attack, has been occasionally noted by other writers.

CASE 8. *Rheumatoid arthritis in a boy.*

Patient, when seen at the end of October, was said to be 12 years old, and the disease had begun in the preceding winter. Before that he had been quite well, and even after his illness set in he was free from the feeling of weakness during the warm weather. It was found on examination that the arthritis involved the knees, wrists, and fingers, and was associated with great muscular atrophy. There was no sweating or cough. A slight systolic murmur at the apex was the only evidence that the heart was affected. Patient had ceased to attend school; he was unable to use the pen owing to the condition of the fingers. Yet the affected joints could be freely handled and passively moved without any pain being caused.

Remarks.—It is unusual to meet with rheumatoid arthritis so early in life, particularly among males. Of the 500 cases of both sexes collected by Archibald Garrod, only 25 (5 per cent) were below 20 at the time of commencement, and only 4 (0·8 per cent) were males under 20. These males were all 10 or more years of age.¹ Nevertheless, this disease is occasionally observed in very young children; Sir Alfred Garrod records one instance in which it began at about 3 years of age.²

CASE 9. *Herpes zoster occurring in several persons in one district about the same time.*

A labourer, æt. 66, came from an Ayrshire village to ask

¹ *Treatise on Rheumatism and Rheumatoid Arthritis*, 1890, pp. 240, 241.

² *Treatise on Gout and Rheumatic Gout (Rheumatoid Arthritis)*, third edition, 1876, p. 515.

advice about the pain which he suffered in consequence of a sharp attack of zona in the lower part of the left side of the chest. The disease had begun about eleven weeks before, and the blisters (which preceded the pain) were by this time practically healed, though still represented by well-marked stains. The pain was now at times completely absent, but would return suddenly with great intensity, and interfered much with sleep. There was formication at night over all the left side, including the limbs.

Patient himself remarked on the coincidence that two other people in the same district had recently been ill of the same affection. A miller, of about the same age as himself, had suffered for a fortnight, and the "laird," who was over 70 years of age, had been ill with it for months. Patient appeared to be familiar with the historical pathology of the place, for he said that a woman in the same locality had the same disease a year ago, and a young man had it five or six years earlier.

ACQUIRED OBLIQUE INGUINAL HERNIA— A NEW OPERATION.

By JOHN O'CONOR, M.A., M.D., T.C.D.,
Senior Medical Officer, British Hospital, Buenos Ayres.

DURING the past five years I have performed 150 consecutive operations (1 death, 2 recurrences) for the radical cure of acquired oblique inguinal hernia, the first 6 by Barker's method, the next 129 by Halsted's, and the last 15 by a method described in this paper. One recurrence took place in the "Barker" operations, one month after operation; in the "Halsted's," one death occurred (acute post-operative mania), and one recurrence within three months.

As far as slight mortality and permanent results are concerned there is little to find fault with in the operation of Halsted, and were it not for the fact that in 80 per cent of my cases thus treated orchitis followed, and in 20 per cent atrophy of the testicle supervened, I should have been very reluctant to abandon this method.

From what I have heard from some Italian surgeons, the same sequelæ are frequently observed after Bassini's operation, therefore I conclude that in our two most radical procedures a testicle is often sacrificed. Consequently, one is forced to

question the expediency of such surgical practice, at any rate in children and adults.

After some experience in the surgical anatomy of the inguinal region, I have come to the conclusion that the two causative factors in this hernia are the funnel-shaped process of peritoneum, which, as Mr. Treves tersely remarks, "seems to offer particular inducements for rupture," and the slight resistance offered by the transversalis fascia to a hernial protrusion at the internal ring; and, furthermore, that no operation merits the qualification radical unless it entails complete removal of the funnel and reconstruction of the abdominal aperture. The operations of Bassini and Halsted undoubtedly fulfil these requisites, but they err on the side of doing too much, for in both procedures the inguinal canal is split up and obliterated; this, to my mind, is superfluous, for the canal has nothing more to do with this rupture than have the skin and subcutaneous tissues in an umbilical hernia. Also some of the cord structures are removed, and the cord itself actually placed in an abnormal site, the result being that the testicle constantly pays the penalty.

The following operation, which is original as far as I am concerned, has for its object the extirpation of the funnel process of peritoneum, and the fortification of the internal ring against future attacks:—

A 3 inch incision is made, commencing at a point half an inch internal to anterior superior pubic spine, carried inwards and downwards to a point 1 inch above Poupart's ligament. The external oblique, internal oblique, and transversalis muscles are opened by separation of their fibres as in M'Burney's appendicectomy. The funnel process of peritoneum is then sought for, and a finger passed behind it in order to differentiate the cord; with a little dissection the latter is freely separated from former. The funnel is next opened, and intestine and omentum pushed upwards into the abdomen by a sponge inserted through wound. If any bowel or omentum be found adherent *in situ* the complication is easily dealt with, but if such adhesions should have formed low down in the sac, upward traction is made on the latter until the testis reaches the external ring, and the portion of the sac thus exposed is divided from above downwards on its anterior aspect; by this manœuvre the majority of low adhesions can be easily brought into view. In case of an old adherent sac, upward traction might be useless, and then nothing would remain but to open the canal from above downwards; in none of my fifteen cases have I had occasion to do so. In

two cases where there were low omental adhesions I doubly ligated the omentum, divided between, and allowed the distal segment to drop back and remain in the sac; no ill effect followed. The sac is next ligated below funnel and divided on proximal side of ligature, and the distal portion is dropped back into the inguinal canal, and there it remains. It may act as filling material for the canal, not that I think any such is required, but I do not consider it of value to divide muscular fibres for the sake of removing it. (In the case of bubonocoele the small sac is readily removed.)

The funnel process of peritoneum is then completely snipped away at its base—i.e., at normal level of parietal peritoneum—a large gap is left, pressure forceps are applied, and the cut edges of the peritoneum drawn down and united by a continuous catgut suture. Having removed the funnel, the opening in the transversalis fascia appears as little like a ring as anything that can be well imagined. I have frequently been struck with the large size of this hole, and wondered how it was that yards instead of inches of bowels had not escaped, particularly so if one thinks of the great amount of intra-abdominal pressure which must be constantly concentrated on this point. Doubtless the oblique muscles save the situation, and this in itself is a strong reason for objecting to operations in which these protective muscular fibres are ruthlessly divided. No muscle is strengthened by having a transverse cicatrix formed in it, and, moreover, I am very dubious as to the durability of any cicatricial tissue barrier.

The edges of the fascial aperture are next caught by forceps and drawn well into the field of operation, four to six silkworm-gut sutures are passed through the internal oblique, transversalis muscles, and transversalis pillars, and brought out in reverse order on the opposite side, care being taken to leave room for the cord to pass into the canal without undue compression. The edges of this deep wound are now firmly approximated, sutures tied, and ends cut off. The wounds in external oblique and skin are united by separate continuous catgut sutures.

In none of the cases treated by this method has any orchitis followed, and no recurrence has so far taken place. I may mention that I never order a truss to be worn after an operation for radical cure.

The advantages which may be claimed for this operation are—(1) The vitality or function of the testicle is not interfered with; (2) there being no division of muscular fibres, the natural anatomical support is not weakened; (3) the cause

only is dealt with, and all superfluous surgery avoided; and (4) the wound is comparatively small, further removed from the septic area, and contains no pockets for blood or serum.

As to the only probable danger attending this operation, I may say that I agree with Professor Ogston, "that there has been more ink than blood shed over the deep epigastric artery;" a pressure forceps and catgut ligature meet the case.

Obituary.

HUGH CALDERWOOD, M.B., B.Sc.

SELDOM has a more promising career been cut short at the outset than that of the late Hugh Calderwood, M.B., B.Sc., Junior Demonstrator of Anatomy in the University of Glasgow, who died in the closing days of the year that has just passed, after a short but painful illness.

In apparently robust health up till the 24th of December, he on that day developed certain symptoms, of which, however, as was characteristic of him, he made light, and on the following morning came into the Western Infirmary to relieve a friend for a few days from the duties of house physician, and it was on the forenoon of this day and while he was actively engaged in the work of the wards that it was first observed how ill he looked. Serious symptoms subsequently developed with great rapidity, and on the following morning his condition was such as to be considered all but hopeless, and although all that the greatest skill and the most unremitting care and attention could do for him was done by those under whose care he was now placed, he quickly sank, and died on the afternoon of the 28th, maintaining to the end, in spite of intense suffering and a full knowledge of the gravity of his disease, the same brave and cheerful spirit that had always distinguished him.

Of his attainments it is difficult to speak too highly. After a brilliant school career at Kilmarnock Academy, especially in the various departments of science, he came up to Glasgow University in the winter of 1891. Here the promise of his schooldays was amply fulfilled, for, besides taking an active part in the social life of the University, he gained many

academic honours, including bursaries, medals, prizes, and certificates of merit, taking the degree of B.Sc. with first-class honours in anatomy and physiology in 1895, and graduating M.B., C.M., with commendation in the following year. His mental qualities were indeed of the highest order, his clearness of insight and originality and resource of mind being remarkable, and leading to the anticipation for him of a yet more brilliant future by all who knew him.

To all this was added a singular charm of manner, and a simple straightforward manliness of character, which won for him the hearts of all with whom he came in contact, and which will ever remain as a most cherished memory to all who enjoyed his more intimate friendship.

CURRENT TOPICS.

GLASGOW AND WEST OF SCOTLAND MEDICAL ASSOCIATION ("GLASGOW MEDICAL JOURNAL").—The annual meeting of this Association, which exists solely for carrying on the publication of the *Journal*, was held in the Faculty Hall, on Friday, the 21st January, 1898, at half-past 4 o'clock. There was a larger turnout of members than usual, and the President, Dr. A. A. Miller, of Crosshill, occupied the chair. Before proceeding to the business of the meeting, the Chairman congratulated Sir William T. Gairdner, K.C.B., upon the high distinction he had recently received from Her Majesty, a congratulation which was very warmly endorsed by the members present. In reply, Sir William Gairdner said that one of the chief gratifications he felt in the honour which had been bestowed upon him was the hearty expression of goodwill which had come to him from all sections of the profession. The honour had been entirely unsought, and the universal expression of satisfaction from his colleagues had been an assurance to him that he had done right in accepting this gracious indication of Her Majesty's goodwill. The Chairman also referred in suitable terms to the great loss which medical journalism had sustained in the death of Mr. Ernest Hart. The Treasurer's annual report was then read, and was unanimously adopted. A good balance was carried forward to next year's accounts; and the Editors'

report showed that there had been no lack of literary material. The Chairman then expressed the hope that the Senior Editor, Professor Joseph Coats, whose enforced absence all deplored, would return from his voyage completely restored to health and able for his important and numerous duties. The Office-bearers for the ensuing year were then elected, and the list stands as follows:—

<i>President,</i>	. . . .	DR. ALEX. MILLER, Crosshill.
<i>Vice-Presidents,</i>	. . . .	{ DR. WILLIAM JAMES FLEMING. DR. SEWELL, Helensburgh.
<i>Editors,</i>	. . . .	{ PROF. JOSEPH COATS. DR. JOHN LINDSAY STEVEN.
<i>Treasurer,</i>	. . . .	{ DR. T. K. MONRO, 10 Clairmont Gardens.
<i>Secretary,</i>	. . . .	{ DR. JOHN LINDSAY STEVEN, 16 Woodside Place.

General Business Committee.

DR. JOHN GLAISTER.	MR. HENRY E. CLARK.
DR. PENMAN, Paisley.	DR. W. K. HUNTER.
DR. BARCLAY NESS.	DR. WM. R. JACK.
DR. KENNEDY, Bearsden.	DR. T. W. JENKINS.

SIR WILLIAM T. GAIRDNER, K.C.B.—From all ranks of the medical profession the most cordial approval has been expressed of the honour which Her Gracious Majesty has been pleased to confer upon our venerable and universally revered Professor of Medicine. Upon no worthier a man could this manifestation of royal favour have fallen than upon Professor Gairdner, and all of us in Glasgow feel that the Queen, in honouring as she has done our beloved physician, has also bestowed an honour upon our medical school.

THE CHAIR OF MEDICAL JURISPRUDENCE.—By the retirement of Professor P. A. Simpson this chair is now vacant. So far as we know, the candidates are Dr. Ebenezer Duncan, Dr. John Glaister, Dr. R. M. Buchanan, and Dr. Hugh Galt. We have not heard of any gentleman from any other great medical centre being a candidate.

THE REBUILDING OF THE GLASGOW ROYAL INFIRMARY.—The plans for the reconstruction of the Royal Infirmary are being considered by various bodies interested in the work, and while differences of opinion as to ground plans and

details abundantly manifest themselves, there is also distinct evidence of a unanimous desire to erect an hospital which will be a worthy memorial of Her Majesty's unique reign. After careful consideration of the size and nature of the site, we are pretty clearly of opinion that an hospital built much on the same ground plan as the present building, with certain modifications to allow of greater space for beds, would be most suitable to the site. It would be a great matter to preserve the present square which faces Castle Street, as in this way, we imagine, the greatest amount of light and air can be obtained. We do not think that the site is suited for a pavilion hospital, such as that represented in the block plans which have been already submitted, and if a ground plan of that kind is to be adopted, it will be absolutely necessary that the present north surgical house should be removed, and a new block built almost as far up as St. Mungo's College. But even if the additional space, thus obtainable, were secured, a pavilion hospital does not seem to us to be the best structure suited for the site, and we would much rather see an hospital erected which would preserve the old Infirmary green. Another plan which has been suggested is the building of a central block, with four radiating wards from each corner. It is admitted that the administration of such an hospital would be much simpler than it is in the case either of an hospital such as the present, or a pavilion hospital with a corridor running north and south. But here, again, we have doubts as to whether the site is suitable for such a structure, and we do not think that either the light or the ventilation would be so good as it is at present. There is a very general agreement in the profession that alternative plans should be submitted, so that the capabilities of the site at the disposal of the Lord Provost's Committee may be accurately judged of before any reconstruction is gone on with, and with this feeling we cordially sympathise.

ROYAL PHOTOGRAPHIC SOCIETY—INTERNATIONAL PHOTOGRAPHIC EXHIBITION, CRYSTAL PALACE, 1898.—The Royal Photographic Society is organising an exhibition which will be open at the Crystal Palace from 27th April to 14th May. In addition to the exhibits of photographs and apparatus of which such exhibitions usually consist, a considerable area has been devoted to collections illustrating as fully as possible the many scientific applications of photography; amongst these *x-ray* photographs play a large part. The committee

are very anxious that the exhibition shall be thoroughly representative, and shall illustrate the very large part which photography plays, both as a recording agent and otherwise, in so many scientific and manufacturing processes, and ask any of our readers who may be able to help by the loan of examples of the application of photography to medicine or surgery, if they would kindly communicate with R. C. Bayley, Esq., Assistant Secretary, at 12 Hanover Square, London, W. Mr. Bayley will be happy to forward anyone interested a copy of the preliminary prospectus, and the committee are prepared to pay the carriage upon all invited exhibits, there being no charge whatever in connection with these loan sections.

THE NINTH INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY will be inaugurated in Madrid, on 10th April, 1898, under the patronage of His Majesty King Alfonso XIII and the Queen Regent, and will be closed on the 17th. Our readers who may be interested can see the provisional programme and the regulations in the Faculty Hall.

"CENTRALBLATT FÜR DIE GRENZGEBIETE DER MEDIZIN UND CHIRURGIE."—It is difficult to translate the name of this new journal into elegant English, but it means, we should say, a journal for the discussion of cases on the borderland of medicine and surgery—of cases where physician and surgeon may co-operate. Well conducted, it is likely to be of great service, and from the contents of the first number we should say it promises very well. It is under the editorship of Dr. Hermann Schlesinger, of Vienna, and is published by Gustav Fischer, of Jena. In an explanatory introduction Mikulicz and Naunyn point out that the new venture in no way interferes with the *Mitteilungen* founded by them on the same subject some two years ago.

"D.C.L." MALT EXTRACT.—We have pleasure in calling the attention of our readers to this new brand of malt extract. It is prepared by the Distillers Company, Limited, of Edinburgh. It has a pleasant taste, and has all the qualities of a good malt extract.

MESSRS. ZIMMER & Co., OF FRANKFORT-ON-THE-MAINE, send us specimens of new preparations which we think are worthy the consideration of practitioners of medicine. One is a new derivative of quinine to which they give the name "Euquinine,"

and which, according to Professor von Noorden, of Frankfort, has no bitter taste and does not cause nausea. Its chemical formula is $\text{CO} \begin{smallmatrix} \text{OC}_2\text{H}_5 \\ \text{OC}_{20}\text{H}_{23} \end{smallmatrix} \text{N}_2\text{O}$ and it is produced by the action of chloro-carbonic ethyl-ether on quinine. Sound people are able to take 15 to 30 grains without injurious effects, and it is said to have good effects in whooping cough and in hectic fever, as well as in neuralgia (*Centralblatt für innere Medizin*, 1896, No. 48). The preparation is quite without taste.

The same chemists also send us pills of oleate of sodium, which they call "Eunatrol," prepared in pills of 4 grains each with a chocolate coating. The drug is said to possess great powers as a cholagogue, and the pills are best taken night and morning, four pills at each time—*i.e.*, two doses of 16 grains each per day.

MEETINGS OF SOCIETIES.

GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY.

SESSION 1897-98.

MEETING II.—8TH NOVEMBER, 1897.

DR. FLEMING *in the Chair*.

I.—RESECTION OF CÆCUM FOR TUMOUR; SYMPTOMS IMPLICATING THE LEFT KIDNEY.

By DR. RUTHERFURD.

History.—R. S., æt. 39, was for the last seven years subject to attacks of pain in the left loin in the situation of the kidney. For the last three years (since 1894, when he first came to the medical wards of the Royal Infirmary), these attacks were accompanied by vomiting; both at that date and recently uric acid was found in the urine in considerable quantity, sometimes with oxalates. No tenderness was ever found in the region of the left kidney, nor was enlargement of either ever made out. There were no marked fluctuations in the quantity of urine passed, and there was never any hæmaturia. Patient considered that since spring

of the present year the distribution of the pain had altered, it being now across the epigastrium from one side to the other.

While he was in the medical wards last August a tumour was detected in the right flank. For some time he was almost constantly under the influence of morphia, and this led Dr. Rutherford to discount unduly the constipation, which was gradually becoming established, while enemata brought on satisfactory motions.

It was decided to cut down over the tumour, and on the 6th September, after considerable delay on the part of the patient, the abdomen was opened in the linea semilunaris. A mass was found in the ileo-cæcal region; the small intestine was distended, and its walls much hypertrophied. The appendix was also distended and hypertrophied (from obstruction at its orifice). The cæcum was bound down over a large surface, and its removal was tedious. The neighbouring lymphatic glands were enlarged. It was found necessary to remove other 7 or 8 inches of the ileum on account of the damage that had been done to its mesentery. A No. 3 Murphy's button was used, that being the largest at hand. Some difficulty was experienced in tucking in the edges of the colon, and a gauze drain was left at the lower end of the wound. Three days later (10th September) the wound was dressed; there was found to be a leakage of intestinal contents. A fistula formed, but is now all but closed. The button was passed on the seventeenth day. The tumour was found to have originated at the ileo-cæcal valve, and is in structure a cylinder-celled epithelioma. The lumen of the stricture is not more than a quarter of an inch in diameter.

[15th December, 1897.—Abdominal and lumbar pain has quite disappeared. Patient has put on 10 lb. weight since leaving hospital.]

Mr. Maylard said the case presented many points of interest both in its clinical and pathological aspect. He thought Dr. Rutherford should be congratulated on the result of the operation, more especially as there is no part of the alimentary canal more difficult to remove than the cæcum when it is firmly bound down by adhesion. One is tempted often in a long and tedious operation to desist, but should persist even although the patient is *in extremis*.

Dr. Alex. Robertson thought it possible that the renal pain was directly caused by the ileo-cæcal lesion. Might it not be that the cæcal condition had given rise to such digestive



Case of Excretion of the Glands

Fig. 14

The following table shows the results of the examination of the glands of the case.



Shows the entire area of the New York and the hydrology of the island.
 Pl. 8. 1
 (Map of the River of the New York)





derangement as to cause a renal pain from the uric acid diathesis? While under his care the patient was much relieved by treatment prescribed for this condition.

Dr. M'Gregor Robertson mentioned the case of a servant who was brought under his notice with the history of very sudden and acute pain referred to the epigastric region. There was a history of disordered digestion for a lengthened period, and the feeling was that the present condition was secondary to a perforated gastric ulcer. She was removed to the Western Infirmary, under the care of Professor Macewen, who first cut down in the epigastric region, but, finding the stomach sound, enlarged the wound, and found as the cause a ruptured tubal pregnancy on the right side. She died two days afterwards. There was no pain or tenderness in the right iliac region.

Dr. James Adams congratulated *Dr. Rutherford*, and briefly alluded to two cases, one of which was an appendical case where the pain was referred to the left kidney. There was nothing to account for it in the kidney itself, and *Dr. Adams* thought that pressure on the left renal vein might be the explanation. The other was a somewhat similar case, but the symptoms pointed to portal obstruction. He was opposed to the use of the button, and employed the stitch in preference.

Dr. Fleming also thought *Dr. Rutherford* deserved credit for his courage in removing a part so extensively diseased and intimately bound down by adhesion.

Dr. Rutherford, in reply, said he had not thought of *Dr. Robertson's* suggestion, but imagined that if such was the explanation the pain would have been bilateral. It certainly did not come into the category of direct nerve transmission. He considered that there was an element of safety in removing the cæcum as compared with resection of the small intestine, inasmuch as the part operated on was fixed and near the abdominal wound. The question of suture depended on the individual operator, but at the end of a tedious dissection the use of a button offered undeniable advantages in rapid completion of the operation.

II.—THREE CASES OF INTUSSUSCEPTION TREATED BY LAPAROTOMY.

BY DR. RUTHERFURD.

The first case, which was the only successful one, was that of a well-nourished vigorous boy of 14 months, who was admitted to the Royal Hospital for Sick Children on 6th July

last at 3 P.M. He had been quite well until 11 A.M. on the previous day, when, during sleep, he was seized with pain in the abdomen, which recurred at irregular intervals until a few hours before admission. During this interval he had been rather drowsy. There was no vomiting till 3 or 4 P.M. on the day of onset, and this occurred shortly after a dose of castor oil had been administered. Since then he had vomited frequently, but not for four hours before admission, during which time he had had no food.

About 10 P.M. on the day of onset (eleven hours after the first attack of pain) there was a normal motion, and an hour later there were passed some fæces with blood and slime. Since then, at each attack of vomiting there has been passed a small quantity of bloody mucus.

On admission it was noted as follows:—"The patient is rather pale, but has not the look of one suffering much from shock. The pulse is rather rapid (120 to 130), and though regular is rather weak and compressible. The abdomen is quite flaccid, and at no part does there seem to be tenderness, though the child resents any disturbance. On deep palpation of the abdomen above and to the inner side of the left iliac fossa, there is an ill-defined tumour, apparently not tender. Temperature in rectum, 100° F."

The child was seen at 4:30 P.M. by Dr. Rutherford. After admission he vomited a considerable quantity of curdled milk, and then passed a small quantity of bloody mucus. Patient was put under chloroform, and there could then be felt a large mass, irregularly rounded, occupying the umbilical region, with about two-thirds of the tumour to the left of the middle line. The whole mass measured about 5 inches across by 4 inches from above downwards, its upper margin being ill-defined. With a finger in the rectum Dr. Rutherford could come into contact with the tumour, but was in doubt as to whether he was actually touching the intussusception.

A gum elastic catheter was passed into the rectum, and an attempt made to reduce the tumour by hydrostatic pressure. The reservoir was never held more than 2 feet above the level of the table, and at no time was there more than 10 oz. of water introduced into the bowel. Under the action of this fluid, combined with inversion and manipulation of the abdomen, the mass disappeared in part. A smaller elongated mass under the left costal cartilages finally disappeared under continuance of the hydrostatic pressure.

After recovery from the chloroform patient was very drowsy, and for the most part slept quietly till 10:25 P.M.,

when he suddenly vomited. He had been seen at 8.30 P.M. by Dr. Rutherford, who thought that there was something of a tumour in the left hypochondrium, but this was so ill-defined that in the absence of symptoms he decided to wait. Immediately after the attack of vomiting the tumour was easily palpable as before, though not coming quite so far down. At 10.50 P.M., thirty hours from the onset of symptoms, patient was again put under chloroform, and the abdomen opened by an incision running upwards from the umbilicus for about 3 inches. An intussusception was found, with its neck to the left of the hepatic flexure, and its apex halfway down the descending colon. The abdomen contained a moderate amount of serous fluid, but there was no fibrinous exudation whatever.

Considerable trouble was experienced in starting the reduction of the tumour, the folds of the receiving and returning layers at the neck being highly œdematous, as was the apex of the intussusception, which was formed apparently by the ileo-cæcal valve. The patient was nearly an hour on the table; at the end of this time the pulse-rate was 160, as against 136 before leaving the ward.

For about five hours after being put back to bed the child was very restless, crying and kicking off the clothes. In the early morning he went to sleep, and throughout the day on the 7th slept a great deal. When awake he took peptonised milk greedily, to the extent of 2 pints in the twenty-four hours following the operation.

About four hours after the operation a small quantity of bloody mucus was passed, and during the day there were three motions, none of which showed any blood. On the 7th the temperature reached 102°, and on the 8th 103°, while the pulse ran to 160 and 170, and the respirations to from 40 to 66. The abdomen continued flaccid and free from tenderness, and nothing could be detected amiss in the chest; there was, however, a slight cough. By the 10th, temperature was normal, and in all respects the child was doing well, taking from this date onwards milk, pudding, &c., as well as his liquids.

On the 20th of July he developed a vesicular eruption. The collodion dressing was removed, and the abdominal wound being soundly healed, the stitches were removed. On the following day he was sent to Belvidere with the diagnosis of chicken-pox. Here he died two days later, apparently with some broncho-pneumonia.

Post-mortem.—An adhesion of the omentum to the scar was

found; otherwise the abdomen showed nothing abnormal. The lungs presented little alteration.

The other two cases, in which resection of bowel was done, may be related more briefly. The first was a boy of 6 months, admitted to the Royal Infirmary at mid-day on the 10th August with symptoms of about fourteen hours' standing. Shortly before 10 o'clock the night before, the child vomited; about 10, he had a motion of the bowels; shortly afterwards he screamed and passed blood from the anus. Since then there had been screaming at intervals, and there had been an almost constant discharge of bloody mucus, a large number of napkins being used. The child had vomited frequently.

Neither the child nor the mother had been having purgative medicines lately. For the last three or four weeks the bowels had been rather loose.

On examination there was found no marked abdominal distension or rigidity, nor was there any tenderness to palpation. An elongated mass was felt on the left side of the abdomen, whose lower extremity could not be reached *per rectum*. The finger came away covered with sanious slimy discharge. Temperature on admission, 101° F.

At 2 P.M., sixteen hours from onset of symptoms, Dr. Rutherford opened the abdomen opposite to and rather above the umbilicus, keeping somewhat to the left. The tumour here was much in the same position and represented the same parts as the previous one. It was found that little could be done in the way of reduction, the receiving layer cracking freely after such handling as seemed necessary. The resistance was obviously due not to any fibrinous gluing of the surfaces, but to the turgidity of the intussusception from oedema and extravasation of blood.

The receiving layer of colon was incised, the deeply discoloured intussusception turned out, transfixed at its neck, and cut off. The entering and returning layers were secured to each other by a series of stitches, as in Maunsell's method, and these were supported by a row of Lembert stitches outside. The longitudinal wound was then carefully closed, and the abdominal wound sutured in three layers.

The child was on the table for about an hour and a half, but on being taken back to the ward wakened up, cried vigorously, appeared to be hungry, and was fed with dilute peptonised milk. Short snatches of sleep were obtained. The apparent well-being did not continue. Temperature, pulse,

and respiration rapidly rose. At 4 P.M. temperature was 104.8° ; at midnight it was 106.4° , the respirations being between 80 and 90. The child died at 4 A.M., the temperature having reached nearly 109° .

Post-mortem Report.—"The abdomen contains very little free fluid; what there is, is more or less turbid. In the right hypochondrium the ileum is found sutured to the transverse colon, as nearly as can be judged, at the hepatic flexure. The bowel for 1 or 2 inches on either side is covered with fibrin. About 2 inches from the line of suture the small intestine presents a line of ecchymosis. Union all round seems good. Edges well glued with fibrin."

The third case was that of a boy, aged 4 months, admitted to the Royal Infirmary on 16th August last about 1 P.M., with symptoms of sixty hours' standing. Shortly after midnight on the morning of Saturday, the 14th, the child woke out of sleep, screamed and vomited, and went on crying at intervals during the night. Moaned during Saturday and Sunday, and was very restless. Vomiting continued at intervals. Matter vomited on 16th was brown and *fæulent*. At 5.30 on Saturday morning a reddish discharge began to come away from the anus. It was very free on Saturday. Since then there had not been so much, and it appears to have been forced away by the effort of vomiting. The child's bowels had been fairly regular. Eight days before onset 1 dr. of castor oil had been given; no other purgative had been taken by either mother or child. The doctor in attendance gave an injection on Sunday night.

On admission:—A tumour is found in the left side of the abdomen, reaching down into upper part of iliac fossa. It seems only slightly tender. Child submits to handling without much resistance. Nothing felt *per rectum*; finger comes away covered with blood. Pulse is soft and frequent.

Operation was begun about 2.30 P.M., and lasted about an hour and a half. The child being put under chloroform, Dr. Rutherford opened the abdomen in the middle line by an incision about 4 inches long, passing to the left of the umbilicus. The small intestine was found greatly distended. Some blood-stained fluid free in peritoneum. The intussusception occupied much the same position as in the previous case; but its neck in neighbourhood of the hepatic flexure, or rather below it, was less easily accessible, as from a less free mesocolon. Here, again, partial reduction only could be made,

the delicate wall of the receiving layer soon beginning to crack. A similar operation was done as in the second case. The intussusception was, however, in worse condition, not only gorged with blood, but sloughy-looking at its apex. After transfixing and cutting away the tumour, it was found that the disproportion between the entering and returning layers was so great that the entering layer had been missed by the needle, and only with difficulty was it identified. It looked more like a blood-stained vein as seen *post-mortem*. It was opened up and stitched to the invaginated colon with difficulty, and a few supporting Lembert stitches put in outside, where, also, the disproportion between the two portions of bowel was only too evident. The remaining steps of the operation were as in the second case, except that the abdomen was washed out with warm saline solution.

The after-course of this case was much as in the previous one, but the collapse was more rapid. Rapid feeble pulse and rising temperature, which latter reached 107° (as determined just after death).

Post-mortem.—There was found a good deal of fibrinous exudation. The suture was obviously inefficient.

Remarks.—In regard to the first of these three cases, Dr. Rutherford expressed his doubt as to whether he had effected a complete reduction by the irrigation used in the first instance. He thought it possible that the tumour had tilted round under the costal cartilages, while perhaps diminishing somewhat in volume, and here he called attention to the deceptive appearance of comfort presented by the child from 5 o'clock till 10:30. In confirmation of this opinion, he referred to the note of his observations at 8:30 of something suspicious in the left hypochondrium. The alternative was that during this period of rest a very firmly impacted intussusception had formed—that, namely, which fell to be reduced after laparotomy. He had difficulty in supposing that reduction of such an impaction could have been effected by any force of injection which it would have been safe to use. This condition of things had been reached thirty-six hours after the onset of symptoms—symptoms milder than those of the second case, where a more advanced condition was reached in sixteen hours. This difficulty of knowing when, after injection, complete reduction has been effected, as well as the view that in many cases it is impracticable by this method even at a very early date, had influenced him in proceeding

at once to laparotomy in the two last cases, apart from their obviously more acute condition ; and he thought that the procedure had been justified by the conditions found.

In manipulating the intussusception, little was to be done by pulling on the entering bowel that was already stretched by being pulled on by the swallowing action of the receiving layer, and one could not be too careful to avoid tearing it. The intussusception must be kneaded gently near the neck to begin with, and then from the apex upwards, as it was pressed upwards out of its sheath. He had been impressed with the delicacy of the bowel wall in these young subjects, and he had been greatly impressed with the difficulty of performing resection of bowel in them. The disproportion between the entering and returning layers he had already referred to, and was able to demonstrate imperfectly in the tumour removed from the third case. This fact offered a drawback to the method which had been used (Maunsell's, though Maunsell's, so far as he knew, was not designed for intussusception pathologically produced). Further, any application of Lembert sutures was difficult in walls of the tenuity of those with which he had had to deal, and he was not sure that there was not a leak from one of the Lembert sutures in the second case.

Mr. Maylard said that there were many points of interest in these three cases. The treatment of this condition varies somewhat with the surroundings. In private the more conservative measures ought first to be tried, whereas in hospital practice the surroundings are so much more favourable to operative interference that these should not fail to be taken advantage of. *Dr. Rutherford* has not told us the variety of intussusception. The conditions are so different in the enteric and ileo-colic variety. He need not be disappointed with his results. Two years ago he went very thoroughly into this subject, and found only two successful operative results. Since then two further operative successes have been reported. Up to 1888 *Barker* found no successful operative result. Better results might have been got in these cases by using the button or simple suture.

Dr. Fleming said that in the employment of injection it is absolutely necessary to have complete anæsthesia. If you succeed with inflation the child probably will live ; if section, statistics show otherwise.

Dr. Rutherford, in reply, said that the longer you wait the less the chance of successful reduction by laparotomy.

III.—OPERATION FOR PRIMARY EPITHELIOMA OF THE UVULA.

BY DR. WALKER DOWNIE.

Dr. Walker Downie showed a patient operated upon for primary epithelioma of the uvula. In July last, a man, aged 56, came to the Dispensary of the Western Infirmary with a history of difficulty of swallowing for the past two months. Within a few days of his seeking advice pain had become a prominent symptom, but breathing was unimpeded. Examination showed the uvula to be enlarged and ulcerated, though a small portion in front remained intact. The ulcerated surface bled on being touched. No glandular enlargement. The uvula was painted with cocaine and removed by scissors. The wound healed in four days. Now the parts are contracted; a small quantity of fluid enters the nose in swallowing.

The base of the tongue is the usual seat of primary mischief, and it is not uncommon for the uvula to become secondarily involved. Here, however, the uvula is the primary seat, a very rare condition indeed—in fact, only one recorded case can be found, and that not quite similar.

Drawings and microscopical sections were shown.

IV.—CASE OF CARCINOMA OF THE STOMACH WITH EXTENSIVE ENLARGEMENT AND INFECTION OF THE LIVER.

BY MR. MAYLARD AND DR. GALT.

Abstract of Clinical Report taken by Dr. Vost.—Mrs. P., æt. 45, admitted to Victoria Infirmary on 11th October, 1897. The patient states that her present illness commenced about the middle of June last, when she observed the appearance of a swelling over the region of the stomach, coupled with a pricking sensation in the part. Since that date her symptoms have increased in severity, and during the last week or two with marked rapidity. She now complains of constant eructations of sour watery material into her mouth, with failure of appetite, with pain in the stomach when taking food, and with pain also, more or less continuous and variable in degree, radiating through to the back and up to the shoulders.

Her clothes, she states, she has now difficulty in getting to meet round her waist. Her present condition is that of a woman much emaciated, in more or less constant pain, with some difficulty in respiration, and inability to rest except on

her side or in semi-erect position. Her temperature is normal. She vomits three or four times daily, but there is no evidence, nor does there appear ever to have been any, of blood in the vomit or stools except for two days before death. The vomited matter was examined for free HCl by Günzburg's solution, but gave no reaction. For about sixteen years she has been troubled with pain before micturition, but relieved after the act. There is no undue frequency in passing water. The urine is loaded with urates, but otherwise normal. Her bowels are costive.

On examination of the abdomen a tumour is very obvious in the epigastric and hypochondriac regions, projecting considerably above the surface, but most prominent in the middle line. It is uniform in appearance, non-fluctuant, and both solid and smooth to the touch. Deep palpation causes pain. It also reveals a tumour, which presents a well-marked and unbroken line, extending obliquely downwards from the ninth left costal cartilage to just below the umbilicus, and then across the abdomen to close above the crest of the right ilium. The defined margin suggests the lower edge of the liver. Percussion shows the whole of this area to be dull and continuous with the normal region of hepatic dullness on the right side, and with the cardiac dullness on the left. There is, however, no displacement of the heart. No impulse is observed in the tumour. The skin over the tumour appears injected with dilated veins. Dr. Douglas Russell saw the patient in the Tradeston Dispensary, and was struck by the rapid development which had taken place in the growth of the tumour during the interval of four days. After being in hospital for five days she suddenly developed jaundice, and on the afternoon of the day on which this appeared she suddenly died.

Dr. Gall's Report.—"The liver is firmly adherent by new-formed tissue to the lesser curvature of the stomach. Glands in the portal fissure greatly enlarged. Gall-ducts patent. The liver is studded thickly with whitish-yellow rounded masses, varying in size from that of a pea to that of an orange.

"In the stomach the lesser curvature is the seat of a new formation which is comparatively hard. Both cardiac and pyloric orifices are free. The growth in the stomach extends downwards on the posterior wall for about $2\frac{1}{2}$ inches; there is no tendency to ulceration.

"Microscopic examination shows the growth in both stomach and liver to be carcinomatous.

"Other organs are normal, except the uterus which contains a small very soft myoma in its posterior wall."

Mr. Maylard said that the features of chief clinical interest in the case were those connected with the very rapid development of the infected liver. The inconvenience caused by the large size of the organ completely masked any symptoms which might otherwise have indicated gastric trouble. The vomiting as well as the difficulty in respiration seemed sufficiently explained during life by the pressure effects of the supposed enormous tumour, although, as now revealed by the *post-mortem*, the former symptom was in all probability due to the actual implication of the stomach in what was the primary seat of the disease.

V.—CAVERNOUS ANGIOMA REMOVED BY OPERATION FROM
THE BEND OF THE ELBOW.

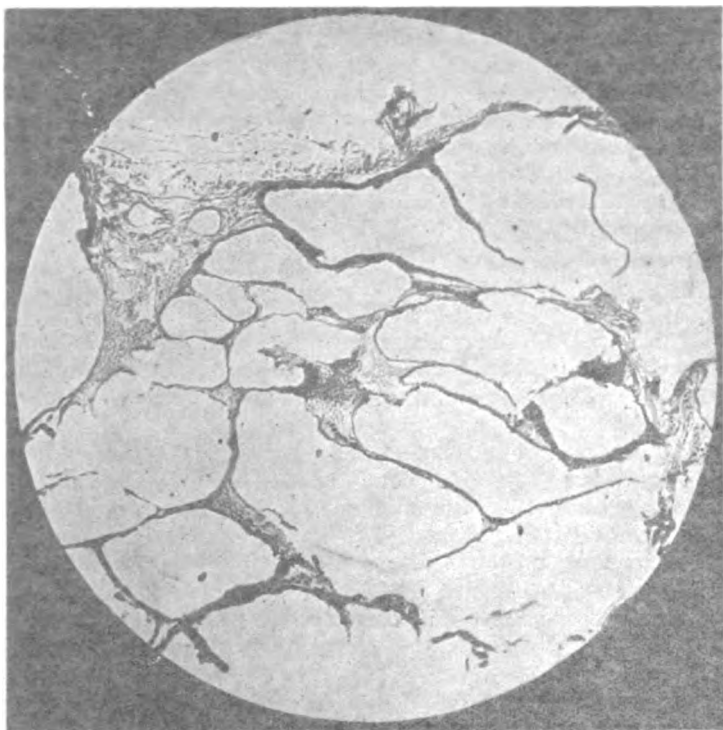
By DR. KENNEDY.

J. K., aged 17, presented himself at the Western Infirmary Dispensary on 29th March, 1897, complaining of a swelling at the bend of the left elbow, together with weakness of the arm.

The swelling was first noticed five years ago, and appeared without apparent cause. At first it was very small, and gave rise to no symptom. It gradually increased in size, but gave no trouble until two months ago, when he received a blow over the swelling. Immediately after the blow he experienced no inconvenience, but soon he noticed a gradually increasing weakness of the arm. The swelling increased in size and became tender. As his condition continued to get worse, and his arm was becoming unfit for use, he sought advice at the Dispensary.

On examination there was a distinct swelling just below the bend of the left elbow. The skin was perfectly natural, presented no cicatrices, and was movable over the swelling. There was no pulsation, and the consistence was rather softer than that of a lipoma, but not fluctuant. There was slight tenderness on firm pressure.

The patient was admitted to Ward XIV, under the care of Dr. Patterson, and on the following day I made a longitudinal incision over the swelling. When the subcutaneous fat was incised the tumour was exposed, and was found to present the characters of an angioma. The finger applied to the tumour detected no pulsation. On clearing away the fat from the



SECTION OF INJECTED CAVERNOUS ANGIOMA.

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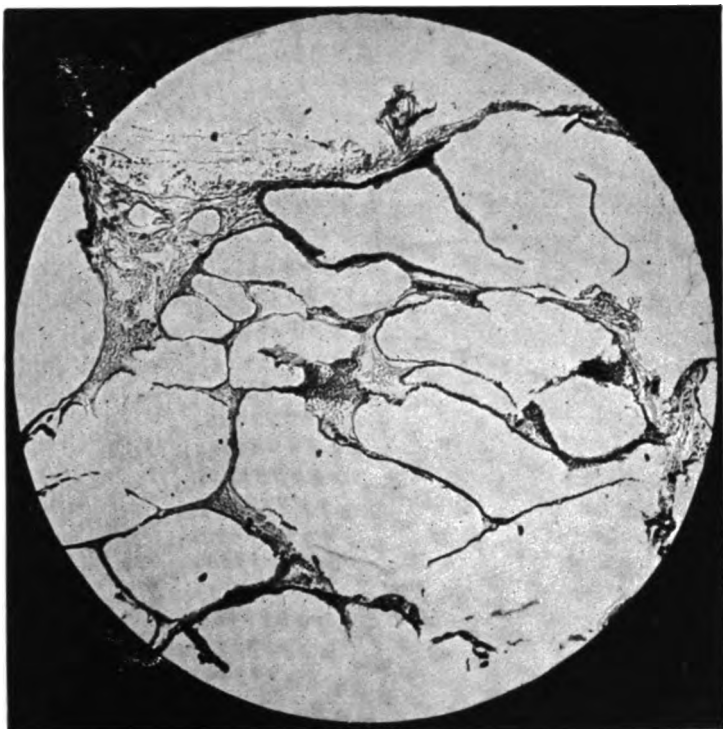
OMA REMOVED BY OPERATION FROM BEND OF THE ELBOW.

By DR. KENNEDY.

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SECTION OF INJECTED CAVERNOUS ANGIOMA.

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surface it was found to be Y-shaped, the bifurcation being proximal. The tumour measured $1\frac{1}{2}$ inch in length, and each portion about three-quarters of an inch in breadth. It could be emptied of its blood by steady pressure continued for some time. On raising it from its bed it was found to receive on its deep aspect several fine arteries, which being divided, the tumour was liberated. The tumour had no connection with the superficial veins, which were not interfered with during its removal. The wound healed by first intention, and the dressings were removed in a fortnight. The patient is now well, and the weakness of the arm has disappeared.

The tumour has been prepared by a method which I have employed for some time for demonstration of the natural condition of excised veins and angiomas. An aperture having been made at its distal end, melted paraffin containing indigo in suspension was injected, the result being that the caverns are dilated, and the appearance shown which was presented when the tumour was exposed at the operation.

Microscopically the tumour shows the characters of erectile tissue. The sinuses vary in size, from considerable cavities down to the smallest spaces. The trabeculae consist of connective tissue, together with a scanty admixture of plain muscular cells. The sinuses are lined with squamous cells, which in most cases are present only in a single layer, but in some cases form a layer several cells deep. In some parts two spaces seem to be separated merely by a double layer of squamous cells, the connective tissue trabeculae not being apparent. In other parts of the section there are considerable areas of connective tissue containing sections of fine vessels and bundles of plain muscular cells.

VI.—CARD SPECIMENS.

A. BY DR. SUTHERLAND AND DR. EDINGTON.

An account of these specimens will be found at p. 81.

B. BY DR. SUTHERLAND.

1. *Stereoscopic photography in the demonstration of morbid lesions.*—Dr. L. R. Sutherland showed a series of stereoscopic photographs, partly in colour, illustrating the following morbid conditions:—Cancer of the umbilicus; multiple sebaceous tumours of the scrotum; extreme curvature of the spine; sarcoma of the leg; epithelioma of the leg; bulky cutaneous

outgrowth from the scalp; tubercular ulceration of the dorsum of the tongue showing distinct evidences of healing; tubercular abscess of the tongue in a child of 11 years; papillomatous tumour from labium majus; an acute infective lesion of the skin of the face, associated with necrosis and simulating noma; large intussusception of small intestine; Meckel's diverticulum.

Dr. Sutherland desired very pointedly to express his great indebtedness to Mr. William Ogilvie, the senior attendant at the Pathological Laboratory of the Western Infirmary, for his skilled assistance in the preparation of the photographs shown.

2. *Specimens from two cases of hydronephrosis associated with calculi.*—These two specimens present a striking contrast.

(a) *Hydronephrosis in the form of multiple cavities communicating with small pelvis—Calculi.*—In the first specimen the kidney is replaced by a number of large thin-walled cysts, which protrude from the general contour and considerably overhang the hilum. The reniform outline is in great part preserved, the expanded kidney measuring from above downwards 18 cm. No trace of renal tissue can be discovered. The cysts, which are partly divided internally by projections from their walls, have apertures, generally of small size, with which they communicate with the pelvis. Several of the upper cysts communicate, and in this common part there is a peculiarly shaped calculus with several processes of a dark red or brown colour. The pelvis, which measures only 3 cm. from above downwards, and 1.5 cm. from side to side, is largely occupied by a calculus, which is closely grasped in a great part of its circumference. Chemically examined the calculus gives the reactions of oxalate of lime, the dark colour of the surface being apparently due to blood. The ureter is of normal size.

The patient was a man, 58 years of age, who had been under the care of Dr. Gemmill for two and a half years before the operation. The hydronephrosis was repeatedly tapped. Latterly, pus appeared occasionally in the urine, and aspiration revealed its presence in the tumour. The mass was removed by Dr. Dalziel, and the patient made a good recovery.

(b) *Hydronephrosis affecting mainly the renal pelvis—Inflammation—Peculiar form of calculi.*—In the second specimen there is a large irregular cavity, consisting essentially of the renal pelvis, and measuring 11 cm. in length by 6.5 cm. in average breadth. The calices are represented by more

or less rounded cavities communicating with the main one. Externally the pelvis is covered with a continuous thick layer of fat. Its mucous membrane is thickened. The ureter opens into the pelvis by an aperture only large enough to give passage to an ordinary probe. Beyond the aperture the ureter is considerably dilated, and the dilation continued down to the bladder. Near the vesical extremity two small flattened calculi similar to those shown were found. The kidney had been laid open and stitched to the abdominal wall. In the pelvis at the time of death there were found fourteen calculi. All of the calculi, as shown, are pale, and some of them white. They all form rounded or oval discs, some resembling the seeds of *strychnos nux vomica*, while the smaller ones are almost scale-like. They are composed of non-fusible phosphate of lime. Twenty-seven similar calculi were removed at the operation.

The patient was a woman, aged 41, who was under the care of Dr. Patterson in the Western Infirmary. About six years before the operation she began to be troubled with recurrent attacks of pain in the left side, accompanied by swelling. On admission there was a large tumour on the left side extending to within an inch of the umbilicus. At the operation the cavity was found occupied by a large quantity of foul-smelling urine. The patient survived the operation nine days.—(From the Pathological Museum of the Western Infirmary).

3. *Calculus in vesical extremity of ureter invaginating wall of bladder—Absence of symptoms.*—Viewed from within there is a distinct slightly lobulated swelling at the seat of the orifice of the right ureter. Before incising the swelling, a structure of a dark bluish colour could be seen within, and a probe introduced from above encountered a hard body of some size. As displayed by incision, the body is a dark flattened oval calculus, measuring 8 mm. in diameter. It has been found to be composed of oxalate of lime. It has prominent somewhat sharp projections, and is very hard. The sac in which it is contained holds it loosely. The ureter in its course shows slight dilation and thickening. There was no hydro-nephrosis. The calculus is practically inside the wall of the bladder, and has invaginated the mucous membrane before it in the form of a sac.

The patient was a man, aged 42, who died of acute pneumonia. There were no urinary symptoms.—(From the Pathological Museum of the Western Infirmary).

GLASGOW EASTERN MEDICAL SOCIETY.

SESSION 1897-98.

MEETING IV.—8TH DECEMBER, 1897.

The President, DR. W. FINDLAY, in the Chair.

DR. MALCOLM BLACK read a paper on "Aseptic Midwifery," which will shortly be published as an original article in this *Journal*.

MEETING V.—22ND DECEMBER, 1897.

The President, DR. W. FINDLAY, in the Chair.

DR. GEORGE MACINTYRE gave a demonstration in the Pathological Lecture Room of the Royal Infirmary on "Electrical Testing of Muscles."

He showed the normal reactions, and contrasted and compared them with the reactions obtained in a case of injury to a motor nerve. The changes in irritability to faradic and galvanic currents were also pointed out. He emphasised the necessity for comparing corresponding parts under circumstances exactly similar. The reactions were supposed by Ehrlich to be due to changes in the oxygen supply caused by electrolysis.

Demonstrations were given of the electric installation in the Infirmary, and of the Röntgen rays apparatus.

DR. JOHN MACINTYRE also gave an interesting account of the latest improvements in x ray work, and showed how effective the x rays were as a diagnostic agent.

MEETING VI.—12TH JANUARY, 1898.

The President, DR. W. FINDLAY, in the Chair.

DR. T. C. BARRAS introduced a discussion on the "Artificial Feeding of Infants."

Owing to the conditions of modern city life the necessity for artificial feeding was increasing, and the welfare of children so fed depended to a very great degree on the practitioner upon whom fell the responsibility of selecting the food and guiding the mother in rearing the infant. The mother might be for many reasons unable to nurse the child, or she might be interdicted from nursing because of the likelihood of a tubercular tendency or a syphilitic taint being transmitted. The best substitute for the mother's milk was undoubtedly that of another woman at a similar child-rearing stage. The milk of asses and goats was then briefly referred to, but there were so many practical difficulties in the way of obtaining this that the only truly efficient substitute came to be cow's milk.

It is essential that all cow's milk to be used for a child be boiled for one or two minutes as soon as it is received into the house. The pleasant taste is no doubt lost, but the digestibility is increased, and the nutritive properties are not much impaired, while all pathogenic micro-organisms are killed.

Pasteurisation, or the heating the milk in a steam chamber up to 150° F., maintaining it at that for twenty minutes, and then rapidly cooling, is effective in sterilising the milk while preserving its original taste; but it is a more troublesome procedure than simple boiling.

The proportion of dilution for a newly born child should be 1 of milk to 2 of water, with a little sugar, of milk, and sometimes a little cream, added. Instead of ordinary water, or along with it barley water if diarrhoea be present, lime water should be added in the proportion of one-third of the total quantity. The dilution of the milk should be diminished gradually as the child grows older, full strength not being given till six months. After that age some form of food should be added, such as Savory & Moore's and Mellin's, or, if a partially predigested food is desired, Benger's.

With regard to quantity it is impossible to fix a limit, but, roughly speaking, a child in the first month can take from one pint to a pint and a half in twenty-four hours.

The child should be fed at regular intervals, at first every hour and a half or two hours. The feeding-bottle should be so constructed that it must be held by the nurse's hand till the child is satisfied, and not arranged that the child may go on drinking till the vessel is empty, while the nurse is performing other duties.

Condensed milk is not to be recommended, even though some children apparently thrive well with its use. It has a

diminished quantity of fat, and is sweetened excessively with cane sugar.

Peptonising the milk has proved of service, and so also has the use of Fairchild's peptogenic powder, which makes cow's milk approach very near to the quality of human milk.

Dr. Syson advocated thorough boiling of the milk. He had used condensed milk sometimes with success; a little raw meat juice may be added to it with benefit. It was not necessary that one should remove a child from the breast for only such very grave reasons as the fear of syphilitic infection; he would advise artificial feeding for much slighter causes.

Dr. Dunlop said that the disadvantage of unpleasantness of taste of boiled milk was a small one, and to be discounted, as the child would be accustomed to it from the beginning. He found that the majority of artificially fed children got too much milk. The infant's stomach could hold only about 2 oz., and less than that quantity was sufficient at each feeding.

Dr. Alex. Munro thought that it was unnecessary to dilute the milk so much; little or no water added would diminish the total quantity consumed, and diminish also the trouble from excessive diuresis.

Dr. Miller Semple had tried, instead of boiling, the addition to ordinary raw milk of a small quantity of some antiseptic, such as salicylate of bismuth.

Dr. William Patrick said that it was not his practice to take a syphilised child off the mother's breast at once. It would be sufficient to give it some grey powder from time to time as symptoms presented.

Dr. Couper, in the syphilitic cases, preferred to treat the child through the mother by giving her potassium iodide.

Dr. Knight emphasised the great importance of sterilising the milk. He had inspected many of the city byres, and found that once cows were installed they never again saw the fields. In a byre, which was said to be a good one, they had found that 50 per cent of the cows responded to the test for tuberculosis by means of tuberculin. It had been found that owners sometimes stopped up all the ventilators of a byre so as to raise the temperature, and thus increase the milk-producing power of the cows. He commended the principle of fractional sterilisation of the milk by heating it to 150° F. for five minutes, rapidly cooling it in a refrigerator, and repeating this process once or even twice. With regard to the use of antiseptics, he had kept a pint of milk in a perfectly fresh condition for twelve days by the addition of a few drops

of formalin (20 per cent formaldehyde); but he feared a possible chronic poisoning from constant use of such preserved milk.

Dr. Barras, in reply, said that boiling of the milk must always be preferable to the addition of antiseptics. He would not give up feeding a child during the night; that could scarcely be done till the child was about eight months old. Many of the foods he mentioned were malted foods; he doubted if the proportion of grape sugar was as great as had been said by one of the speakers. One which he had not named he had found to be of excellent service, namely, Horlick's malted milk.

REVIEWS.

A Manual of Hygiene for Students and Nurses. By JOHN GLAISTER, M.D., D.P.H. (Camb.). Illustrated by Seventy Drawings. London: The Scientific Press, Limited. 1897.

THE study of sanitary science, and the practical application of its doctrines to the welfare of the community, constitute one of the most striking signs of the progress which has marked the long and beneficent reign of our gracious Sovereign. Our improved knowledge of the laws of health has enabled us greatly to limit, if not entirely to put an end to, the ravages of epidemic disease; our towns and villages have been rendered cleaner, and enabled to enjoy more of the blessings of fresh air and sunlight; and the poor, who are always with us, have the benefit of healthier homes and purer food. Our hospitals are no longer subjected to the dire outbreaks of pyæmia which decimated the surgical wards of former days, and sick men, women, and children now enjoy the privilege of medical and surgical treatment in airy wards, a privilege which is often not participated in by the wealthier members of the community. This is a great work for hygiene to have accomplished. The literature of sanitation, too, is now enormous, ranging from the bulky text-book for the expert to the manual for the ordinary reader, for nowadays no one is regarded as having completed a liberal education who has not attained to some knowledge of the laws of health.

Dr. John Glaister has for many years been well known in

Glasgow as an enthusiastic teacher and student of sanitary science. The present volume will do much to enhance his reputation as a lucid exponent of its laws and doctrines. It is no easy task to select from a science, so wide in its range, the parts of it which are fundamental and of the first importance to the beginner. This has been the object of the author in writing the volume before us, and we have no hesitation in saying that he has accomplished his task well. Indeed, we are surprised that he has been able to compress within the compass of some two hundred and eighty pages so much important information upon the ventilation heating and drainage of our houses, the necessity for and the modes of obtaining a pure water supply, personal hygiene, sewage disposal, preventable diseases, disinfection, and isolation hospitals. Indeed, it seems to us that there is scarcely a department of sanitary science upon which he has not touched, and generally in a manner quite sufficient for the requirements of the beginner.

The book is readable from beginning to end, and we can most heartily commend it to medical students and nurses as a reliable manual.

The Living Substance; as Such and as Organism. By GWENDOLEN FOULKE ANDREWS. Boston: Ginn & Co. 1897.

THIS curious essay is an ambitious, but not altogether successful, attempt to expound a theory of life in an aphoristic manner. Although Mrs. Andrews persuades herself that she has carried out her work effectively, and simplified matters by expressing herself in what he calls a "unified terminology," her composition is so obscure and far-fetched that her own prediction will undoubtedly prove true that there "will be few who will read with patient thought the long and minute record of selected facts in the foregoing pages." A single diagram is the only pictorial product of her self-described "exceptionally far-sighted eyes, having great range and swiftness of accommodation." And instead of comparing her own ideas with those of other writers on the same subject, a familiar and instructive way of rendering one's meaning and position clear, she avoids reference to all other works except Butschle's epoch-making work on *Protoplasm*. Nor does she allude to or give her opinion in regard to the origin of life, an essential point to the proper understanding of anyone's views in regard

to the nature of life. Her chief object seems to be to show that the present standpoint from which we view living beings, while in a certain sense right and necessary, is, properly speaking, not the scientific standpoint. In this regard she is probably right. She believes that the adult individual is only a phase of the living substance as organism, and not essential to it as such. The prominence given to the individual only vitiates our conception of the nature of the living substance. The flower is for the seed, not the seed for the flower. She justly complains of "the simple, unconscious anthropomorphism of all our mental processes which makes this so natural a first standpoint." In biology, as well as in other sciences, advancement has partly depended upon our emancipating ourselves from the anthropomorphic point of view. The corpuscle, and not the adult individual, is the true biological unit, yet no work in biology properly realises this conception, even although its truth is assumed. Mrs. Andrews substitutes for the term corpuscle the "living substance as such," and remarks that corpuscular phenomena have been erroneously interpreted, especially in regard to the true nature of division. She regards cell areas as presenting a *curious repetition* of parts, and the cell walls as merely adventitious filamentous divisions through which the living substance penetrates or extends without virtual break. Her disregard of the true nature of the cell theory detracts much from the value of her speculations. In no department of biology, she points out, has the error of regarding the adult specific form as the basis of research been so greatly committed as in speculations regarding the doctrine of heredity; that is, in the explanation of the likeness of nearly related individuals, and especially of individuals in the same line in succession, such as offspring and parent. Mrs. Andrews grasps the logical distinction between the likeness between parent and offspring, and how the likeness between them is caused. The idea of heredity assumes, nay, even postulates, that the one gets its likeness from the other. Assumptions are dangerous, both in science and philosophy. There is no *evidence* of any transmission through germ and sperm cells; but if there be such a transmission it must necessarily be through these cells. While the uncritical thought of mankind has always accepted some conception of hereditary transmission, it has always been doubted or denied by critical philosophy. Further, the idea existed before those cells were discovered, which evidence shows must be implicated in the process. Biologists find that this fact occasions physical difficulties, and physicists maintain that transmission is a

physical impossibility. Hence, in future the likeness between parent and offspring must be accounted for on a different basis. Mrs. Andrews aptly calls heredity a "phantom," and if, in a future edition of her work, she makes the evidence of her conclusions sufficiently clear, she will render a signal service to the science of biology.

Abdominal Surgery. By J. GREIG SMITH, M.A., F.R.S.E. Sixth Edition, in Two Volumes. Edited by JAMES SWAIN, M.S., M.D. With 224 Illustrations. London: J. & A. Churchill. Bristol: J. W. Arrowsmith. 1897.

THIS work on abdominal surgery has enjoyed such a large circulation that within a year another edition has been called for. During that time, as Dr. Swain remarks in his preface, "the master-hand was called away, and the surgical world suffered the loss of one who had no small share in raising the surgery of the abdomen to its present high position." With the issue of the fifth edition much fresh material was introduced, and throughout the book there was abundant evidence of careful and judicious revision, but in this edition very little change in the text has been made, so that it may be regarded as practically a reprint of the fifth edition.

The first volume is divided into six sections. The first, occupying sixty pages, deals with the diagnosis of abdominal tumours, and is the least satisfactory section in the whole book. Probably this is accounted for by the difficulties which present themselves to the surgeon in discussing in a general way the diagnoses of abdominal diseases. These maladies, perhaps from their special difficulties, require, above all others, to be considered in conjunction with all the facts of an individual case. To generalise is difficult; still, as far as possible, the author has endeavoured to lay before his readers the main facts and considerations required in forming a diagnosis. The second section is devoted to abdominal operations considered generally, and occupies over ninety-one pages. Here we have a very carefully written and well considered article. The author's classification and nomenclature are remarkably good, and might with great advantage be generally adopted. The careless use of such terms as "gastrotomy," "laparotomy," and "abdominal section," as employed by many writers, must be condemned as incorrect and misleading.

The third section, of one hundred and twenty-one pages,

deals with operations upon the ovaries, the Fallopian tubes, and broad ligaments. This is one of the most important sections in the book; it has to do with the most extensive departments of abdominal surgery, the part, indeed, in which the early triumphs of modern abdominal surgery were gained. In the fourth section, of eighty-eight pages, operations on the non-gravid uterus are discussed, while in the fifth section, of ninety-two pages, those adopted for the gravid uterus and for ectopic gestation are fully described. In the sixth section one hundred and twenty-four pages are devoted to operations on the stomach. This completes the first volume; the second begins with a section of one hundred and twelve pages, devoted to probably the least satisfactory and least successful department of abdominal surgery, namely, that which has to deal with diseases and injuries to the intestine. This department, although wide in its range and full of possibilities, has not advanced at the same rate as other branches of abdominal surgery. In this particular field of work not only is great skill and care required in the technical part of his work, but the surgeon also requires great judgment and experience to decide aright the best method of saving life in each individual case. It may be truly said that no two cases are exactly the same.

The eighth section deals with operations upon the kidneys and the ureters, and to this section one hundred and ten pages is given. The most important part is devoted to the surgery of the kidneys, while to that of the comparatively recently developed surgery of the ureters ten pages are considered sufficient. The remaining seven sections treat of abdominal operations on the urinary bladder, operations on the liver, the gall-bladder, and the biliary ducts; on the spleen, the pancreas, growths of the omentum, mesentery, peritoneum, and the parietes; operations for abdominal injury, and those for peritonitis and its effects.

Under each of the sections the author carefully and systematically goes over the surgical anatomy of the parts, he then gives the history of the operations, and points out the conditions for which the operation may be performed, he discusses the diagnosis of the disease, gives the indications for operation, and describes the method of operating. Such is the general scheme of the book, and in carrying it out the author has been most successful. His power of description is particularly good and his judgment sound, but his ability in contending points of controversy is not so marked. The book being a work on surgery, perhaps it is not right to be over-

critical on points of pathological interest only, but the mode of classification adopted throughout seems to us peculiar. The diseases are not described in order according to the nature of the lesion present, but they are arranged under the heading of the operation which may be required for their relief. Does this not seem rather an artificial method?

The author has adopted Mr. Reginald Harrison's classification of tumours of the kidney, which, although it may be useful from a clinical aspect, is most unscientific, and certainly would never be accepted by a pathologist.

For example, tumours of the kidney are divided into two great classes—those of “congenital origin” and those that are “post-congenital.” Under the former head we have such dissimilar lesions as sarcoma, cystic disease, hydronephrosis, cavernous tumours; and under the latter all other conditions which lead to an increase in the bulk of the kidney are included—neoplasms, fluid accumulations, inflammatory new formations, and specific growths. The pathology is the only weak part of the book; the statistics, the bibliography, and the illustrations are all that could be desired. Every new method of treatment has been introduced and carefully described, the steps of new operations are given with great clearness, and the author has shown much judgment in indicating those that are worthy of being adopted in surgical practice. He has given us a compendium on abdominal surgery which no student of the subject can afford to do without; the book well deserves the great success which has been accorded to it.

A Surgical Handbook for the Use of Students, Practitioners, House Surgeons, and Dressers. By FRANCIS M. CAIRD, M.B., F.R.C.S. (Ed.), and CHAS. W. CATHCART, M.B., F.R.C.S. (Eng. and Ed.) London: Charles Griffin & Co., Limited. 1897.

THIS is the eighth edition, “revised throughout,” of the well-known pocket manual, “Caird and Cathcart,” as it is familiarly called by the many students it has served. Many old diagrams are excluded, but their places have been more than filled, and the text correspondingly added to, so that although the pocket size of the book cannot yet be said to have been exceeded, yet it is drawing dangerously near the limit. A line will certainly require to be drawn very soon, else its sphere will be widened indefinitely. One cannot but think, too, that in its scope it

includes many subjects quite without the proper sphere which its title would indicate. Such subjects, *e.g.*, as urine testing and analysis, sick-room receipts, &c., though very useful, would more appropriately come into another class of work altogether. Still, one should not grumble, perhaps, at the surfeit of good things, but rather be grateful for the same.

The best parts of the work, as in earlier editions, are still those dealing with treatment of fractures, and the applications of bandages and splints; their utility and lucidity is very largely due to the free assortment of diagrams illustrative of the methods of application, and, indeed, in many cases the diagrams, even without the letterpress, give a very good idea of the particular method. The chapter upon electricity, and its uses and application in medicine, is clear and explicit, and, as such, will be welcome to not a few.

One can imagine that the work, complete as it is now, will be of value to the student, mainly from the point of view of fractures and their treatment, and the other portions of the book will be much more welcome to the general practitioner.

Some Points in the Anatomy, Pathology, and Surgery of Intussusception. By D'ARCY POWER, M.A., M.B. Oxon., F.R.C.S. Eng. London: The Rebman Publishing Company, Limited. 1898.

THE author's apology for the work which he has presented on the somewhat well-worn subject of intussusception seems necessary only to one who has not perused this small volume of eighty odd pages. Its careful study will give a good deal of satisfaction to many who, despite multitudinous contributions to the literature of the subject, still find much—very much—of the mystical about such a subject. The author has divided his work into three parts, the first dealing with "Some Points in the Minute Anatomy of Intussusception;" the second embodying a survey of "The Pathology of Intussusception," as viewed from the standpoint of anatomical, physiological, pathological, and clinical data; the third treating pretty fully of the whole subject of "Treatment," surgical and otherwise.

Perhaps the most notable portion of the work is the descriptive portion of the first chapter above referred to, and probably the least praiseworthy is the illustrative portion of the same. The pictures presented by the description of the minute histology of specimens collected from many sources as

typical instances of the various forms of intussusception, are, on the whole, very good, and the particular changes produced at different stages in the various coats of the bowel affected are well discussed, but the illustrations, mainly photo-micrographic, perhaps partly from the, in many cases, advanced condition of necrosis of parts involved, are, indeed, disappointingly unsatisfactory. One cannot help thinking that, unless a photo-micrograph can be reproduced with some degree of definition and precision, one is better served by recourse to the time-honoured, if by some regarded as antiquated, diagram. The photo-micrographs are, indeed, a blot on the otherwise generally admirable features of the work.

The experimental tests described in the second chapter have not, indeed, been productive of much positive good result, but they are at least well described, and establish in some cases a satisfactory negative.

Opinions are so varied upon the subject of the treatment of intussusception, that any discussion of this cannot be much more than a survey of the chief views, with perhaps an indication of the leanings of the author, as justified in his own mind from his own experience. Such is, indeed, the character of the third chapter. Two points which the author lays particular stress on are worthy of mention:—

1. Even in doubtful cases, purgatives must be completely withheld—as a result both of experiment and clinical experience it has been found that a fatal issue is very much more probable after operation upon a patient previously treated by purgation.

2. In operative treatment, “hardly a case can arise, in which the surgeon is justified in closing the abdominal wound without at least attempting to complete the operation by reducing or removing the intussusception. Such half measures as the formation of an artificial anus are very rarely justifiable, for the results obtained from them are generally most disastrous.”

Spinal Caries. By NOBLE SMITH, F.R.C.S. Ed., L.R.C.P. Lond.
London: Smith, Elder & Co. 1897.

To quote the author of this work—“The most experienced surgeon may have a difficulty in determining the real nature of the case, not only in the very early stages, but even when the disease has made considerable progress, for it sometimes happens that the signs commonly or exceptionally attributed

to caries are absent, or that other symptoms mask those pertaining to this disease." That this view of the extremely uncertain diagnosis of caries has evidently weighed heavily upon the author is very plainly seen in a perusal of his work. How far this may be due to the somewhat loose method of classifying—"at least as far as symptoms," and "as being also of an inflammatory nature"—"various forms of traumatic injury, strains, contusions, partial fractures, and inflammatory affections following severe illnesses and causing much pain," under the head generally of "Spinal Caries," may be a matter for individual opinion, but from most points of view—diagnostic, prophylactic, and therapeutic—it seems very questionable. One is by no means prepared to admit the general truth of the assertion, which the author quotes, that caries affecting the atlas and axis is due, at least in a preponderating proportion of cases, to syphilis, any more than that in this region it is rarer now than formerly, on account of no longer being allowed to "run on unchecked" or "being too freely treated with mercury."

In dealing with the difficulties in diagnosing caries from some closely allied affections, there is, again, a good deal of looseness in the method of classification. After carefully describing a case of so-called carcinoma simulating caries, a small note is added, merely *en passant*, to the effect that at the time of the original description, "distinction between carcinoma and sarcoma was not recognised."

In a somewhat lengthy section the author quotes a number of fairly instructive cases as illustrating the frequent obscurity of symptoms in caries, but why spoil the generally good effect of the section by including under this head one case entitled, "Necrosis of a Lumbar Vertebra," and another of so-called "Spinal Periostitis with Tetanic Spasms?"

Surely the description of the former case would at once suggest the idea rather of acute septic osteomyelitis, and the autopsy, revealing, as it did, purulent foci in lungs, joints, &c.—the whole illness observed for seven days—all the facts point to the justice of this view.

The latter case, which the author puts down as probably syphilitic, certainly responded to antispecific remedies, and its inclusion here raises again the question as to the author's reason for mixing up such widely divergent types, when, as shown in the chapter dealing specially with symptoms, we see quite plainly that the picture or pictures presented to us are taken almost exclusively from cases of true spinal caries or tubercular disease of vertebral column.

The chapter, dealing with symptoms and diagnosis, is unquestionably the best part of the book. As to the chapter on treatment, many of its features are good, but in the portion dealing with the use and means of adaptation of the metal splint, one fails to find stated at all accurately the conditions under which such should be applied, its gross weight, and the general effects of such a cumbersome apparatus upon a weakly patient. As to operative treatment of abscess following or accompanying caries, one may question the wisdom of the conclusion arrived at by the author as the result of experience, viz., that the best method of treating such cases is by evacuation and subsequent daily irrigation. All surgical experience, we had thought, went to prove the opposite.

The illustrative portion of this work is by no means the least satisfactory, and this is specially the case in the large number of outline diagrams; these, indeed, giving merely outline sketches of spinal deformities, varieties, and degrees are strikingly instructive. The reproductions from photographs are less so.

Diseases of the Ear, Nose, and Throat, and their Accessory Cavities: a Condensed Text-book. By SETH SCOTT BISHOP, M.D., LL.D. Philadelphia: The F. A. Davis Company. 1897.

MEDICAL text-books are usually written on one of two plans: either the various parts are treated according to their relative importance, and the generally accepted views are expressed; or the author makes the work an embodiment of his own observations and deductions, in which case there is an inclination to give undue prominence to certain matters, while others—perhaps not less important—are dismissed in a perfunctory manner.

The author has here adopted both plans in part. While the work is primarily intended for the student and general practitioner, several sections have been written in considerable detail, so as to be of value to the specialist. We are of opinion, however, that loss of proportion is undesirable in elementary text-books, for often what the specialist gains is at the student's expense. As illustrating this, we might refer to hay fever, which occupies here nearly thirty pages, while nasal polypus is disposed of in one and a half.

A long article is devoted to compressed air appliances and their uses, most of which will be new to European specialists.

The compressed air is utilised not only in the production of sprays, but in the treatment of ear affections. It is to supplant Politzer's bag; and the catheter "is destined to pass out of vogue to a certain extent, for the reason that air, volatile medicaments, and even fluid vaselin spray, can be successfully projected into the middle ear by means of the inflator adapted to the high pressure apparatus. To the average patient this is a happy culmination of the inventor's efforts, for it averts positive suffering, the possibility of infection and of irritative effects, and incidentally minimises the amount of skill required for treatment."

The section on the surgical treatment of mastoid disease is specially good. Hay fever is considered by the author to be due to an excess of uric acid in the blood, and he has succeeded in breaking up the morning attacks of sneezing and nasal stenosis by doses of acid at bedtime and on first awaking in the morning.

In some places the author is not up to date. The chapter on diseases of the accessory cavities is very imperfect and antiquated, and should be completely rewritten for the next edition; those on syphilis are also unsatisfactory.

In spite of the shortcomings mentioned, the volume will prove a welcome guide to the student and busy practitioner on account of its eminently practical character.

Handbuch der Gynäkologie. Herausgegeben von J. VEIT.
I u. II Band. Wiesbaden: Verlag von J. F. Bergmann.
1897. (*Handbook of Gynecology.* Edited by J. VEIT.
Vols. I and II. Glasgow: F. Bauermeister. 1897.)

THIS promises to be by far the most important gynecological work of the time. It has already been extensively reviewed in appropriate journals (e.g., *Monatschrift f. Geburtshülfe u. Gynäk.*, May-June, 1897). Here we can only give a synopsis of its contents, and point to some of the more salient features.

Vol. I includes Asepsis and Antisepsis in Gynecology, by Löhlein; Anomalies of Position and Mobility of the Uterus, by Küstner; Diseases of the Vagina, by Veit; Gonorrhœal Affections of the Female Urinary and Sexual Organs, by Baum; Development and Developmental Anomalies of the Female Genitalia by Nogel.

The position of the uterus is determined, according to Küstner, by (1) the degree of distension of the bladder and

rectum; (2) gravitation; (3) the action of the muscular fibres in and beneath the mesometrium. The last is by far the most important factor, and the one which constantly tends to keep the uterus in the *normal* position of anteversio-flexio. Following Mackenrodt, Küstner ascribes a powerful action to the muscular fibres passing between the cervix and fascia pelvis and their extensions backwards under Douglas' folds and forwards to the bladder. The *round ligament* also is a most important agent. Being firmly attached for a considerable distance to peritoneum, every short segment of it may serve as a *punctum fixum* and allow the ligament to act upon the fundus uteri. Küstner marvels that so little value is usually ascribed to it, a view which should please some of our townsmen.

The *normal* position of the uterus is one of anteversio-flexio; hence that term has no place in pathology. So-called anteflexion pessaries belong to the past.

Schultze's *parametritis posterior*, which was supposed to cause *fixation* of the uterus, is most frequently, if not always, due to intraperitoneal inflammatory processes.

Retroversion and retroflexion are treated at considerable length. The immediate cause is relaxation of the supporting ligaments, a view by no means universally held, and recently controverted by Chrobak and Rosthorn. Operative treatment is indicated where pessaries are useless or unsuitable. Küstner prefers Alexander's operation, with the inevitable modification. Vagini-fixation is practically condemned.

Nearly one hundred pages are devoted by Bumm to a consideration of gonorrhœa in women, and few parts of the great *Handbuch* are more instructive. It is now placed beyond doubt that, at least, 15 per cent of all gynæcological cases are directly due to gonorrhœa. What is not so well known is that that disease not infrequently complicates pregnancy and the puerperium. Oppenheimer found the gonococcus in the genital tract of 30 out of 108 gravidæ; Schwarz in 77 out of 617. As a cause of sterility gonorrhœa is in the first rank. In 87 sterile marriages, Gusserow detected gonorrhœal infection in 62.

Prophylactic measures which will be disregarded in this country are plainly stated by Bumm. Prognosis, fortunately, is less gloomy than formerly stated. In the way of local treatment preference is given to the silver salts.

The second volume includes Diseases of the Female Bladder, by Fritsch; Physical Examination of the Bladder, by Viertel; Inflammation and Atrophy of the Uterus, by Dodenlein; and

an elaborate account of Fibroid Tumours of the Uterus, by Gebhard and others.

The part of most general interest is undoubtedly Dodenlein's account of inflammation of the uterus. The traditional arrangement is abandoned, and the bacteriological point of view asserted. In the uterus, as elsewhere, inflammation is due to the immediate or remote action of micro-organisms, and those cases which present anatomical alterations and clinical phenomena analogous to those associated with inflammation, but in which no trace of bacterial activity can be detected, are relegated to a different category. In a word, endometritis is not synonymous with inflammation of the mucous membrane of the uterus, but is a convenient descriptive term including (1) inflammation due to infection; (2) certain alterations of the endometrium characterised for the most part by hyperplastic processes, but in all probability not due to infection. It is obvious that this view of the subject has a very direct bearing upon prognosis and treatment.

When complete, Veit's *Handbuch* will be *facile princeps* in the sphere of gynecology.

J. G. J.

Diseases of Women: a Handbook for Students and Practitioners. By J. BLAND SUTTON and A. E. GILES. London: The Rebman Publishing Company, Limited. 1897.

IN a short preface the writers state it has been their desire to relate facts and describe methods belonging to the science and art of gynecology in a way that may be useful to students for examination purposes, and enable them to practise this important department of surgery with advantage to their patients and satisfaction to themselves. It may be doubted if these ends are ever compatible. The work that will combine them must at least display unity of conception and observe the laws of perspective, and both these are absent from this book. A very arbitrary arrangement is followed. Chapter follows chapter as if so many separate subjects were being discussed, and all sense of proportion disappears when a page is devoted to anomalies of the hymen, and only a few scattered lines to the very important subject of gonorrhoeal disease. Exception also must be taken to some dogmatic statements. To teach that no hard and fast line can be drawn between normal menstruation and dysmenorrhoea is not likely to be to the advantage of patients. Nor is the cylindrical speculum the simplest for ordinary purposes. It is almost time, indeed, that reference ceased to be made to it. Why Reid's speculum,

at once the simplest and best, remains unnoticed is a source of wonder. Perhaps it is because it is not made in Germany.

The handbook is well printed, and the illustrations, if sometimes badly chosen, well executed. The leading facts of the science are given, and the surgical tendency of the art emphasised by the devotion of nearly one hundred pages out of some four hundred and twenty to gynecological operations. 7.6.9

A Manual of Obstetric Practice for Students and Practitioners. By Professor A. DÜHRSEN, M.D. Translated and Edited from the Sixth Emended and Enlarged Edition by JOHN W. TAYLOR, F.R.C.S., and FREDERICK EDGE, M.D., F.R.C.S. With Illustrations. London: H. K. Lewis. 1897.

THERE are little more than three hundred pages in this volume, and those pages are not large, but the book well deserves the attention of the practitioner. The fact that it has already reached its sixth edition in Germany (the first appeared in 1890) prepares us to find it possessed of distinct merits, and we see no reason to quarrel with the translators' claim that it is a practical book in which nothing essential is neglected, and every direction for diagnosis or treatment has been carefully chosen. The author is representative of the modern German school in the emphasis he lays on the strict practice of antisepsis; and the manner in which he recommends that disinfection of a case of labour should be carried out is characterised by a thoroughness that will often not be attained in this country. But it is well to aim high, and in theory at anyrate, disinfection cannot be too thorough.

Lawson Tait's Perineal Operations, and an Essay on Curettage of the Uterus. By W. J. STEWART M'KAY, M.B., M.Ch., B.Sc. London: Baillière, Tindall & Cox. 1897.

THE chief interest of this little book lies in the fact that it gives us an authoritative representation of Lawson Tait's perineal operations. The author was for some time assistant to Mr. Tait, and the latter has revised and annotated this description before publication. On this account alone it is worth consultation, and Mr. Tait's opinion that "Dr. M'Kay's ingenious diagrams, and carefully detailed description, will bring the understanding of these simple proceedings within the reach of all," is quite justified.

The essay on "Curettage of the Uterus" discusses in a practical way the various conditions in which this operation is advisable, gives plain directions for its performance, and duly refers to the dangers attending it. But it is too fragmentary to form a satisfactory statement of the subject.

Economics, Anæsthetics, and Antiseptics in the Practice of Midwifery. By HAYDN BROWN, L.R.C.P., L.R.C.S. Edin. London: J. & A. Churchill. 1897.

WE can recommend this little volume to our readers as being one of the most illiterate and unscientific productions ever presented to us for review. We forgive the author, however, as he is sometimes really quite amusing.

Reports from the Laboratory of the Royal College of Physicians, Edinburgh. Edited by J. BATTY TUKE, M.D., and D. NOEL PATON, M.D. Vol. VI. Edinburgh: William F. Clay. 1897.

THE chief interest of the present volume lies in the account it contains of the new laboratory, which was opened for work in June, 1896. The old laboratory had done service from 1888 till then. The work done in the old building is recorded in six volumes of published *Reports*, including the present, a number of which have already been noticed with approval in our pages. The six volumes contain 114 papers, roughly classified as follows:—Anatomical, 23; physiological, 27; pathological, 47; pharmacological, 15; other subjects, 2. This strikes us as being a splendid record of work, fully justifying the establishment of the laboratory by the College of Physicians, and we trust that in the new laboratory much more good work may yet be done.

Transactions of the British Institute of Preventive Medicine. First Series. London: Macmillan & Co., Ltd. 1897.

WE welcome this volume with great satisfaction. It is an indication that the higher pathological research has at last secured a home in our country. With Lord Lister at the head of affairs, and Dr. Allan M'Fadyen as Director, the future of this Institute is assured. The volume is unpretending in its appearance, but the papers, particularly those on the sterilisation of water and milk, are of great practical value.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

MEDICINE.

By W. R. JACK, M.D., B.Sc.

The Bacteriology of Whooping-Cough.—Czaplewski and Henseh (*Deutsche Med. Wochenschrift*, 9th September, 1897) describe the results of their investigation of the sputum in an epidemic of whooping-cough occurring in Königsberg. They were completely disappointed in their expectation of finding the diplococcus described by Ritter, but discovered a small bacillus to be present in every case they examined. It was for the most part easy to demonstrate, and in some cases present in very large numbers and in pure culture. It was a small short rod with rounded ends, resembling the influenza bacillus in its behaviour to staining fluids and in size, but growing upon the ordinary media. The smallest forms resembled cocci; those preparing for fission, diplococci. In the latter careful staining gave a greater depth of colour at the poles, while the middle part remained almost colourless. The full-grown rod was not more, usually, than thrice as long as it was broad, but longer forms were observed in cultures. The organism is motionless, and possesses little resistance. It may be stained by the usual aniline colours, and in young cultures by Gram's method. In the sputum the bacteria are very numerous in severe cases, lying for the most part free, and not enclosed in cells. At first they are scanty, but may always be found on careful search. Other bacteria, especially streptococci, are often found along with them, and as these grow more freely they make the isolation of the organism difficult. The colonies, which are not very characteristic, resemble dewdrops. They are slightly elevated and of a light greyish-yellow colour. Pure cultures form a greyish-yellow film in serum tubes, and grow even on gelatine at 23° C. As in the case of influenza, attempts at inoculation into animals did not succeed. Over thirty cases were examined, and the bacillus was found in all. In one in which the diagnosis had not yet been made the authors predicted whooping-cough from the presence of the organism, and their prediction was verified. They consider, therefore, that they are justified in regarding the organism as the cause of whooping-cough. Further detail is promised later.

Leprosy treated by Carasquilla's Serum.—Buzzi (*Deutsche Med. Wochenschrift*, 14th October, 1897) gives an account of the case of a boy of 15 who came to him in 1891 with hypertrophy of the skin of the face, which was studded with leprous nodules, with thickening of the distal ends of the extremities, where also the nodules were numerous, with pigmentary patches on the extremities and trunk, and marked glandular enlargements. All known methods of treatment were tried, but the disease steadily progressed. Tuberculin not only had no effect upon it, but seemed to determine a more violent outbreak. Treatment by Carasquilla's serum was begun in February, and continued till June, 1897. In all, twenty-six injections were given, beginning with 0.3 ccm. and increasing to 3½ ccm. Marked inflammatory oedema appeared at the points of injection, lasting usually for two or three days. The larger doses of the serum caused much pain, but no abscesses formed. Usually there were no threatening symptoms, but twice there were symptoms of collapse. Marked desquamation took place over the pigmented areas, which became less dark in colour. The thickening of the extremities diminished, and the skin, especially on the face, became smooth. The bald patches on the scalp became covered with a new growth of hair, and leprous ulcers on the hard and soft palate and the uvula cicatrised. Whether

permanent cure will take place remains to be seen ; at all events, the result so far is much better than that attained by any other method of treatment.

Investigations of the German Commission on Foot and Mouth Disease.—Loeffler and Froesch (*Deutsche Med. Wochenschrift*, 23rd September, 1897) give a brief account of the conclusions arrived at in regard to this disease, which should interest medical as well as veterinary practitioners. They may be summarised as follows :—

1. All the bacteria so far found are accidental, not causal. The bacillus of Sigel-Bussenius produces severe intestinal symptoms in young calves ; but not the disease in question, which may be evoked by lymph, bacteriologically sterile.

2. Cattle and swine have been experimentally shown to be especially liable ; while sheep, goats, dogs, rabbits, guinea-pigs, mice, and birds could not be infected.

3. The surest mode of infection is by injecting the lymph into the circulation. Subcutaneous and cutaneous inoculations are uncertain. After intravenous injection the vesicles appear in the mouth in from one to three days, and on the feet one to two days later. With their appearance the virus disappears from the circulation.

4. 100 ccm. of fresh lymph is sufficient for an injection. If lesser quantities, down to 50 ccm., be used, the result is uncertain.

5. A temperature of 37° C. for twelve hours, or of 70° for half an hour, destroys the virulence of the lymph, as does drying in a summer temperature for twenty-four hours. At 0° C. the lymph remains virulent for fourteen days or longer.

6. In the majority of animals the disease produces immunity two or three weeks after its onset. In those that are specially susceptible a first attack does not produce immunity, but a second does. In the blood of animals that have become immune there are products which, when mixed with fresh lymph and injected into susceptible animals, prevent the action of the lymph.

7. Cattle and swine can be artificially rendered immune, either by injecting the above-mentioned mixture, or by injecting lymph which has been heated till its virulence is gone. One injection is usually sufficient, and produces no marked ill effects.

8. It is therefore scientifically proved that foot and mouth disease can be efficiently combated by protective injections.

The Present Position of the Treatment of Locomotor Ataxia.—In the light of the present teaching with regard to the neuron, says Eulenburg (*Deutsche Med. Wochenschrift*, 28th October, 1897), our views of this disease have undergone a sensible modification. It has now to be looked upon as a disease of the sensory neuron, which must be considered as one entity. Apparently it may find its point of attack at very different levels, even as high as the cerebral cortex. The *cell* which the cells of the spinal ganglia, as trophic centres for the posterior root-fibres, play in the occurrence of intramedullary disease is still somewhat obscure. But there is some ground for the view that one has at first to deal with primary alterations of these cells, and that in them lies the cause of the intramedullary affections of the posterior root-fibres, usually considered to be primary. Locomotor ataxia, in this light, would have to be looked upon as a secondary process—a consecutive ascending degeneration. Such considerations cause one to subject the present therapeutics of the disease to a critical review.

After recalling the complete change of views and of methods of treatment in the last thirty years, Eulenburg points out that the course and prognosis of the disease vary with every case, that in many it may remain stationary for years or for life at a comparatively early stage, that real improvement may set in, and even that a functional or relative cure may take place, although in the extremely small minority of cases. Such results may occur with the most differing, even the most irrational, forms of treatment, and are only to be explained by supposing that it is in the essence of a number of

cases of the disease that they tend to pause or to stop at a certain degree of injury to health, or, arrived at that point, to admit of improvement, as far as function is concerned. Reviewing former and present methods of treatment, he points out the worthlessness of derivatives and revulsives, and of silver nitrate, and indicates that although electrical and hydrotherapeutic treatment have had their successes, they are scarcely more rational. On the question of the antisyphilitic treatment, he shows that syphilis can hardly yet be regarded as the one *causa causans*, for though admittedly a very large proportion of ataxics have previously had syphilis, one meets with cases where the closest inquiry elicits no evidence of its presence, hereditarily or by acquisition. Again, admittedly, those who have never had syphilis run a very small, although still some, chance of contracting locomotor ataxia. But this is not because syphilis has a causal relationship to the disease, but that it depresses the energy and power of resistance of the nervous system, and especially of the sensory neuron, and so must be regarded only as a predisposing cause in a line with other predisposing causes, such as functional excitement and irritation of the neuron. The results of treatment would seem to bear out this view. Though so many cases are dealt with in this way, "cures" are surprisingly rare, and the palliative effects obtained have not been uniformly greater than those of non-specific methods. Cases with undoubted syphilitic antecedents have been improved, or even "cured," without specific treatment; and specific treatment, especially inunction, has not infrequently caused more or less serious damage.

Narcotics and antineuralgics must always find their place in gastric crises, lightning pains, &c. With regard to animal extracts, though Eulenburg has seen improvement while spermin was being used, he does not commit himself. "Mechano-therapeutics," which, in its various forms, has for its object the stretching of the spinal cord, has led in many cases to symptomatic improvement, more than which could hardly be expected. Frenkel's "compensatory exercises" also endeavour to improve the ataxic condition, but are based upon a physiological principle. Their object is to induce the sufferer to study and to acquire again the lost muscular sense. Their results, as far as the nature of the disease permits, have been very satisfactory. A complicated apparatus is not always necessary, but the exercises must be adapted to each individual case.

Pseudo-hypertrophic Paralysis in Old Age.—Destarac, of Toulouse, records a case of pseudo-hypertrophy, which began in a man, aged 85; there was no morbid heredity.—(*La France Médicale*, 11th January, 1895.)

MATERIA MEDICA AND THERAPEUTICS.

By R. BARCLAY NESS, M.A., M.B., C.M.

Orthoform, a New Local Anæsthetic.—Professor A. Einhorn and Dr. R. Heinz, in *Munch. Med. Wochens.*, xliv, 931, publish some facts relating to this new substance.

Under this name a new synthetic product related in constitution to cocaine has been introduced into use for the production of local anæsthesia, as the result of an extended inquiry into the cause of the anæsthetic action conducted by the authors. From the account given by those authorities orthoform appears to be a substance of great interest on account of its being without toxic character, but at the same time a powerful antiseptic, and, consequently, well adapted for use in the treatment of wounds.

Orthoform is described as a white, voluminous, crystalline powder, is not hygroscopic, melts at 120° C., slightly soluble in water, and has on that account an advantage over all other anæsthetic agents that are known, inasmuch as it is but slowly absorbed in consequence of its sparing solubility,

and thus a durable effect is produced. The crystallisable orthoform hydrochloride is readily soluble in water; it produces anaesthesia like the free ester, but as the solution has an acid reaction it is not always applicable.

The remarkable anæsthetic action of orthoform is manifested very decisively when occasion requires the tranquillisation of exposed nerve ends. The otherwise painful operation of transplanting living skin may be carried out under the influence of orthoform without any sensation. Orthoform has a remarkable effect upon burns, contusions, and painful abscesses, and it has been found very beneficial in the treatment of ulceration of the throat or stomach, and in cancer. It is, moreover, so free from poisonous action that comparatively large quantities amounting to nearly two ounces may be applied in the course of a week for dusting wounded surfaces without any danger. Internally it has frequently been administered to the extent of from eight to fifteen grains daily.

From a chemical point of view, the account given by the authors of the investigation by which the characters of orthoform were ascertained were of considerable interest.

Among the isomeric amido-oxybenzoic esters the *m*-amido-*p*-oxybenzoic-methyl ester and the *p*-amido-*m*-oxybenzoic-methyl ester were found to be anæsthetic without causing any irritation, and the latter is most rapid in its action. It is to this compound that the name orthoform has been given.—(*Pharmaceutical Journal*, 25th September, 1897, p. 277.)

The Digestive Power of Pepsin in the presence of Alcohol.
—Some years ago C. Symes, Ph.D., carried out some important experimental work with the view of determining the relative digestive value of the various pepsins in the market. Later on he showed how the digestive power of pepsin in coagulated albumen was reduced by the presence of alcohol, and in proportion to the amount of alcohol present. These experiments were conducted in glass bottles placed in a water-bath kept at a uniform temperature. If, however, the bottles were replaced by wetted animal membranes the condition of things was materially altered. It was found that the alcohol present in the liquid through which the coagulated albumin was distributed soon began to diffuse through the wetted membrane, and that the pepsin commenced to act with the same energy as in those containers where no alcohol was present, so that at the end of two hours there was no considerable difference between the weight of undissolved albumin in each case. The interest which this experiment has for us is that it shows that an alcoholic liquid, such as wine, may be used in preparing a solution of pepsin for medicinal use, and that if properly made it soon becomes active when taken into the stomach in the presence of suitable food. Rectified spirit may also be used as a preservative in making essence of rennet, because its excessive dilution and ready evaporation, when mixed with the proper quantity of milk and warmed, overcome any prejudicial effect the spirit may have on the peptic bodies present. Glycerin is an excellent solvent of pepsin, as is well known, but unless it is used in sufficiently large quantity to render the solution distasteful to the patient it is not a good preservative. A solution of freshly prepared undried pepsin in dilute glycerin, to which 10 per cent of rectified spirit is added, forms, when filtered, an excellent medicinal preparation which may be flavoured to taste.—(*Pharmaceutical Journal*, 6th November, 1897, p. 398.)

Treatment of Rheumatism by the Local Application of Salicylate of Methyl. By L. E. Duplessis.—Salicylate of methyl, the active principle of the volatile oil of wintergreen, is a colourless liquid having a strong, persistent, but, to some, agreeable odour. When applied locally to the joints in acute articular rheumatism it acts very efficiently. For four hours after painting the affected part the pain gradually diminishes, and remains relieved for six to twelve hours. After two or three days the fever falls, and five or six days later the swelling of the joint disappears. Salicylic

acid may be detected in the urine in about half an hour after application of the methyl salicylate, the amount present gradually increasing for six to nine hours. Elimination ceases in about forty-eight hours after suspension of treatment (G. Lemoine, Linossier, and Lamion).

The action of salicylate of methyl appears then to be due to the absorption of salicylic acid. But it gains access to the general circulation without causing such gastric disturbance as is often present when the drug is taken by the mouth. This, at least, is the outcome of 31 set of observations gathered together in the work of Duplessis, who has collected all that has been published on the subject up to the present time. We find in it full directions for the application of the drug.

We choose the part which is most painful—that is, in the case of acute articular rheumatism, the joint which is most swollen. We place underneath the joint a large piece of gutta-percha tissue, then drop by drop apply the salicylate of methyl to the part. The joint is then enveloped in the gutta-percha tissue, and outside of this is placed a layer of cotton-wool, and the whole fixed with a bandage. The covering must be complete (though this has its disadvantages) in order that the drug may not be dissipated. Absorption is then insured.

The medium dose when friction is used is 4 grammes, which we can repeat in twenty-four hours. Lemoine has demonstrated the fact that, when the amount used exceeds 12 grammes, the elimination of salicylic acid in the urine is not increased. He considers, therefore, that this dose should never be exceeded.

The action of salicylate of methyl is specially marked in the subacute and chronic forms of rheumatism. It has also been employed with success in muscular rheumatism. Duplessis does not believe that it should be used too much in acute articular rheumatism. Salicylate of soda and salicin in these cases maintain their pre-eminence as therapeutic agents. We may, however, utilise even in these cases, with some advantage, the analgesic and antithermic properties of salicylate of methyl.—(*Gazette des Hôpitaux*, 6th November, 1897, and *Gaz. Hebdom.*)

Dysentery: its Forms and Treatment.—Under this title a short paper appears in the *Practitioner* of December, 1897, by Surgeon-Captain W. J. Buchanan, M.B., B.Ch., &c., in which he reviews the principal forms of dysentery and their treatment. While recognising the efficacy of the old line of treatment by large doses of ipecacuanha, he draws special attention to a combination of drugs which he has found successful in a very large number of cases and in all forms of the disease.

The formula given is the following:—

R—Liq. hydrarg. perchlor.,	15 min.
Tinct. opii.,	5 "
Tinct. nucis vomic.,	2 "
Glycerini,	20 "
Aquæ,	ad. 1 fl. oz.

To be taken three or four times daily, and continued in chronic cases for two or three weeks if necessary.

A somewhat similar combination of perchloride and cannabis indica, he states, has been in use in India for a long time; but he has found the results from the above more permanent—that is, the number of cases treated in this way which recur are far less than in any other method of treatment with which he is acquainted. He had special opportunities of judging of this, having charge in a large gaol of 1,200 prisoners, most of whom were undergoing long-term sentences. Under other forms of treatment it was not unusual to find a patient come back within a week or so of his being discharged as "cured."

Toxicity of Uranium Salts.—Since it has been proposed to employ

uranium nitrate in diabetes in doses of from 30 to 60 centigrammes three times daily, Angermayer calls attention to the fact that, notwithstanding the close chemical analogy between uranium and iron salts, the former are highly toxic, half a milligramme per kilogramme of body weight being quite sufficient to cause death.—(*Pharmac. Journ.*, 30th October, 1897, p. 378; *Pharm. Zeit.*, xliii, 79.)

Disinfection of Rooms and Clothing by Vapour of Formaldehyde. By G. Lovell Gulland, M.A., M.D.—We seem in the gas formaldehyde, which is usually met with in a watery 40 per cent solution known as formol or formalin, to have an almost perfect agent for aerial disinfection, as it is very penetrating, is almost non-poisonous, though irritating when concentrated, and does not injure textile fabrics in any way. The difficulty is to ensure its formation in sufficient quantity. It is not possible to do so by evaporating formalin by heat, as a process of polymerisation goes on and the formaldehyde becomes paraformaldehyde, a white solid. When this was found impracticable, a solution of the gas in methylated spirit, known as Holzin, was tried; but this is expensive, some polymerisation takes place, and there are obvious dangers in evaporating large quantities of alcohol in a closed space. Lamps have been used where formaldehyde is formed direct by the oxidation of methyl alcohol; but this method is also very expensive, as only a small quantity is formed by each lamp; and the method of Roux and Trillat, where a formaldehyde solution is overheated under a pressure of three atmospheres, falls under the same objection. Aronson (*Zeitschr. f. Hygiene u. inf. Krank.*, vol. xxv) has experimented with an apparatus supplied by Schering, and finds it the best hitherto devised. Solid polymerised formalin (trioxymethylen) is used, in the form of pastilles. These are arranged in a sort of sieve, through which the products of combustion from a spirit-lamp are made to pass. These turn the polymer into gaseous formaldehyde, and enough water is present in the vapour to prevent re-polymerisation. The gas is to be left in the room for twenty-four hours, and the rules about closing apertures, &c., are exactly the same as those for sulphur disinfection. The vapour does not penetrate mattresses so well as steam does, but is quite sufficient for curtains, clothes, &c. A smaller apparatus of the same kind is useful for deodorising sick-rooms and closets.—(*Practitioner*, December, 1897, vol. lix, p. 625.)

DISEASES OF THE THROAT.

By JOHN MACINTYRE, M.B.

Malignant Diseases of the Larynx.—The question of the best operative procedure following early diagnosis is one of great interest to the profession. In this connection, Dr. Sendziak, of Warsaw, has written one of the most valuable treatises ever placed before us. After careful consideration of the subject from all standpoints he comes to the conclusion that unilateral extirpation following early diagnosis is to be recommended. Sir Felix Semon, of London, has written in reply, and his able criticism, while fully complimenting Dr. Sendziak, points more in the direction of early diagnosis followed by thyrotomy, and thinks this method of procedure will take the place of all others. He quotes the success which has attended operative procedure in England in support of his views. Not the least important part in such a discussion turns upon the interpretation of the statistics of thyrotomy, and that of Sir Felix Semon is worthy of the consideration of all surgeons. Sendziak has without doubt produced a classical work on the subject.—(*Die Bösartigen Geschwülste des Kehlkopfes und ihre Radicalbehandlung*, von Dr. Johann Sendziak, Warsaw, Verlag von J. F. Bergmann, Wiesbaden.)

Anæsthetics.—As a local anæsthetic cocaine still holds its own. Dr. Gibb (*Philadelphia Polyclinic*, January, 1897) writes of the advantages of eucaine instead of cocaine, and recommends it. Dr. Newcomb (American Laryngological Society, May, 1897) recommends guaiacol as a local anæsthetic, and Dr. Martin (*Archiv. Internat. Laryn., Ot., et Rhin.*, May, 1897) compares eucaine and cocaine in their respective advantages and disadvantages. Dr. Coosemans (Belgian Society of Otology and Laryngology, see *British Journal of Laryngology*, October, 1897) recommends holoraine used in a 1 per cent solution, and is stated to be a useful agent, while free of the dangers of cocaine.

Nervous Diseases of the Larynx.—The physician is frequently called upon to examine the larynx with a view to diagnosis of other affections than those of the larynx itself, and interesting experiments by Krause, Horsley, Semon, and others offer reasonable explanations of many of the phenomena with which we are familiar. Semon has formulated certain views which in certain quarters are accepted as sufficient to amount to a law implying that paresis of the muscles which close the glottis is generally due to functional change in the system—*e.g.*, hysteria. Similar changes, on the other hand, in abduction are commonly, if not always, due to organic disease in the nerve trunks or the medulla. There can be no doubt as to the utility of such a law, particularly in diagnosis, and, founded as it is upon careful experimental research, the position of the authors is usually considered a very strong one. Dr. Grossman, of Berlin (*Archiv. für Laryn. u. Rhin.*, Band VI, Heft 3), in a treatise which he has lately published, stated that the acceptance of such a view has led to very weighty conclusions, and that of late the whole teachings of laryngeal paralysis are based on the axiom that the abductor fibres succumb earlier than the adductor. He comes to the conclusion that there is hardly an observation on abductor paralysis which can be proved; but before accepting such a view, those interested in the subject should refer to Semon's able reply published in the same *Archiv.* A consideration of this will show what a difficult task Dr. Grossman has engaged upon. All the same, the subject is one of intense interest, and is bound to attract considerable attention.

Tubercle.—In the Section of Laryngology at the Moscow International Congress, the question of tubercle was again under consideration. Dr. Gleitsmann opened the discussion with an interesting review, in which he gave the result of his own experience. Many distinguished writers, such as Drs. Botey, Scheppegegrell, Gavino, Weil, Heymann, Przedborski, Chiari, and Hajek took part in the discussion, and the opinion prevailed that from the surgical standpoint distinct progress has been made of late in treatment. The claims of sulpho-ricinate of phenol were brought forward by Ruault and Heryng; guaiacol was referred to by Dr. Botey; and attention was paid to creosote, benzoin, euphrophen, menthol, enzymol, antiphthisin, and local anæsthetics, and their respective therapeutic values placed before the meeting. Ligno-sulphate was recommended by one speaker, Dr. Bransfield, but most confidence seemed to be placed in early diagnosis followed by surgical treatment.

DISEASES OF THE EAR.

By DR. WALKER DOWNIE.

On Suppurative Middle-Ear Disease and its Relation to the Exanthemata. By Dr. R. H. Woods, Dublin.—The above formed the subject of a presidential address to the Dublin University Biological

Association. After referring shortly to the symptoms and treatment of acute otitis media occurring apart from the exanthemata, and the relative value of local sedatives and paracentesis in its treatment, he proceeds to detail his observations on a large number of cases of otitis associated with the eruptive fevers. The observations were made at the Hardwich Fever Hospital, Dublin, and for purposes of comparison he divided the cases into three sets. In the first series the progress of the cases, so far as the ears were concerned, was not interfered with unless discharge supervened. In the second series, experiments were made with ovoids impregnated with various drugs in order to find out whether, and if so to what extent, the progress of otitis was influenced by their application. And in the third series of cases the treatment considered best in the second set was systematically applied to every ear which became inflamed. In the first series 121 cases (65 measles, 56 scarlatina) were observed, but not treated. In these 242 ears 24 were inflamed, and in 49 of them discharge followed—i.e., in 20 per cent of the total number under observation the middle-ear inflammation resulted in rupture of the drum head. In the second series there were 97 patients (10 measles, 87 scarlatina), and in these 194 ears 47 became inflamed, and this was followed by discharge in 18 cases. There was thus rupture and the escape of pus in 9 per cent of the total number of cases. In the third series 101 patients were observed (57 measles, 44 scarlatina), and discharge occurred in 8 per cent. The combination of sedatives which, as a result of these observations, he considered most useful in staying the progress of middle-ear inflammation is the following:—One-seventh of grain of ext. opii liq., with one-fourteenth grain each of cocain hydrochlor. and atropin sulph., made into ovoids with gelato-glycerine as a basis. He presses home the necessity of sterilising the speculum by boiling after its use in the examination of cases with purulent discharge, and details the method of cleansing the meatus and middle-ear with carbolic and corrosive sublimate solutions. He speaks strongly against the routine adoption of paracentesis in ordinary acute otitis media, holding as he does that in many cases inflammatory secretions in the middle-ear become absorbed under sedative treatment.—(*Dublin Journal of Medical Science*, January, 1898.)

Anatomical Observations which explain why Mastoiditis does not occur with more frequency in Cases of Suppurative Otitis Media. By Dr. Forus, Madrid.—The author states that the tympanum is not an exclusive cavity, but that it is divided into various compartments by fine septa, consisting of nothing more or less than a species of epithelium. Of these compartments there are two of great importance—viz., the antero-inferior, which he calls the *tubal compartment* of the tympanum; and the posterior-superior, the *attico-mastoid compartment*. The septum which separates these encloses in its thickness the chain of ossicles, and it stretches from the external to the internal wall of the tympanic cavity.

To prove his contentions, he attached the canula of an irrigator to the Eustachian catheter, after removing the superior wall of the mastoid antrum, and injected water, which did not flow out when the level of the fluid was so raised as to be in favour of the irrigator. Then, to make sure that there was no tubal obstruction, the tympanic membrane was incised, and the fluid at once escaped freely through the incision. Afterwards the external auditory canal was tamponed, but the water did not escape through the mastoid opening until the vessel of water was raised from 24 to 30 cm. above the level of the ear, when the septum referred to appeared to give way, and the water escaped through the mastoid antrum. This, he thinks, demonstrates the presence of at least one dividing membrane, which accounts for the rarity of mastoiditis when compared with the number of cases of suppurative otitis media.—(*Laryngoscope*, December, 1897.)

An interesting discussion which took place at the Montreal meeting of the British Medical Association, on "The Ultimate Results of Operations on the Mastoid," is reported in the *Journal* for 27th November. In the same number

will be found a paper by Dr. A. H. Buch on "New Operative Treatment of Chronic Suppurative Diseases of the Antrum and the Vault of the Tympanum." While recognising the value of ossiculectomy for cases in which the disease is limited to a small area within the tympanum, and of the various modifications of Stache's operation in cases where the antrum is also involved, he is disposed to believe that these operations are resorted to in many cases where simpler cleansing methods would be effective. This is particularly so in private practice where the requisite amount of time can be given. The cleansing method recommended consists of two steps:—(1) The removal, chiefly by mechanical means, of all granulation tissue, cast-off epithelium, and detritus from the diseased tympanic cavity and antrum; and (2) the destruction by chemical means of all pathogenic germs. Injections of hydrogen dioxide, through various curved glass tubes, play an important part in this procedure. Besides being a germicide, this fluid effervesces actively when brought into contact with decomposing organic material, and this action dislodges retained substances. Following this cleansing process, antiseptic powders are introduced freely. Beneficial results, he states, have followed the faithful and persistent employment of this method in a large proportion of cases.

IN the *Lancet* for 1st January, 1898, will be found a report of a case which was recently shown by Dr. Walker Downie before the Medico-Chirurgical Society—namely, "A Case of Extensive Septic Thrombosis of the Lateral Sinus following Influenza, which was operated on with successful result."

In the *Archives of Otolaryngology* for October, 1897, the following are the titles of the original communications:—

1. "Pathological Changes in the Middle-Ear in Measles," being a report of eighteen autopsies. By Oswald Rudolf, Munchen.
2. "Notes on the Pathology of Intracranial Complications in Ear Disease." By Dr. W. Kümmel, Breslau.
3. "Chronic Otitis Media Purulenta—Abscess in the Temporo-Sphenoidal Lobe, followed by Purulent Leptomeningitis and Death." By Dr. A. Barkan, San Francisco.
4. "Notes upon some New Low-toned Tuning-Forks for Clinical Purposes." By Dr. E. D. Spear, Boston.
5. "On Initial Symptoms of Sclerosis." By Dr. Zwaardemaker, Utrecht.
6. "The Position of the Consonants in the Tone Series." By Prof. Bezold, Munich.
7. "Intracranial Extension of a Middle-Ear Suppuration: Operation and Recovery." By Dr. E. Schmiczlaw, Copenhagen.
8. "A Case of Homolateral Acute Affection of the Auditory Facial and Trigeminal Nerves." By Dr. Daniel Haufmann.
9. "On Tympanic Neuralgia in connection with Abscess of the Tongue." By Prof. O. Körner, Rostock.
10. "Notes on a Case of Middle-Ear and Mastoid Suppuration in a Diabetic Patient, with Remarks on Percussion of the Mastoid Process." By Prof. Körner, Rostock.
11. "The Diagnosis of Perforation of the Drum-Membrane." By Dr. E. Bloch, Friburg.

This number of the *Archives* also contains another instalment of Prof. Siebenmann's paper on "The Central Acoustic Tract and its Involvement by Tumour of the Mid-Brain, especially of the Corpora Quadrigemina and the Tegmentum."

Books, Pamphlets, &c., Received.

- Merck's Index. 1897. Verzeichniss sämmtlicher Präparate, Drogen, und Mineralien, mit Erläuterungen. Darmstadt: E. Merck. 1897.
- Selected Essays and Monographs. Translations and Reprints from Various Sources. London: The New Sydenham Society. 1897.
- The Span of Gestation and the Cause of Birth, a Study of the Critical Period and its Effects on Mammalia, by John Beard. Jena: Gustav Fischer. 1897. (3 m.)
- The Earliest Recorded Discovery of Thermal Springs, by Prosser James. London: John Bale & Sons. 1897.
- Polynuritis in Relation to Gestation and the Puerperium, by H. G. Lurney, M.A., M.D. London: J. & A. Churchill. 1897. (1s.)
- Aneurisms of the Aorta, by Oswald A. Brown, M.A., M.D. London: H. K. Lewis. 1897. (2s. 6d.)
- Facts About Monte Carlo, by a Group of Shareholders. London: The Roxburghe Press. (1s.)
- The Essentials of Experimental Physiology, for the Use of Students, by T. G. Brodie. London: Longmans, Green & Co. 1898. (6s. 6d.)
- The Practitioner: a Journal of Practical Medicine. New Series. Vol. VI. London: Cassell & Co. 1897.
- Cleft Palate, &c., by W. Arbuthnot Lane, M.B. London: The Medical Publishing Co., Limited. 1897. (5s.)
- Clinical Lectures on Urine, by J. Rose Bradford, M.D. London: The Medical Publishing Co., Limited. 1897. (2s.)
- The Edinburgh Medical Journal. New Series. Vol. VI. Edinburgh and London: Young J. Pentland. 1897.
- The Tallerman Treatment by Superheated Dry Air, edited by Arthur Shadwell, M.A., M.B. Oxon. London: Baillière, Tindall & Cox. 1898. (3s. 6d. net.)
- Transactions of the Royal Academy of Medicine in Ireland. Vol. XV. Edited by John B. Story, M.B. Dublin: Fannin & Co., Limited. 1897.
- The Year-Book of Treatment for 1898. London: Cassell & Co., Limited.
- The Retrospect of Medicine, edited by James Braithwaite, M.D. Vol. 116 (July-December, 1897). London: Simpkin, Marshall, Hamilton, Kent & Co., Limited. (6s. 6d.)
- Outlines of Rural Hygiene, by Harvey B. Bashore, M.D. Philadelphia: The F. A. Davis Company. 1897.
- Prize Essays on Leprosy, by J. Ashburton Thompson, M.D., and James Cantlie, M.A., M.B. London: The New Sydenham Society. 1897.

**GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR
THE FIVE WEEKS ENDING 22ND JANUARY, 1898.**

	WEEK ENDING				
	Dec. 25.	Jan. 1.	Jan. 8.	Jan. 15.	Jan. 22.
Mean temperature, . . .	30·8°	44·9°	39·8°	43·9°	45·9°
Mean range of temperature between day and night, . .	12·4°	10·7°	11·9°	9·3°	10·0°
Number of days on which rain fell,	1	7	7	3	6
Amount of rainfall, . . ins.	0·8	2·95	1·02	0·9	0·88
Deaths registered,	284	334	338	295	256
Death-rates,	20·7	24·3	24·3	21·2	18·4
Zymotic death-rates, . . .	3·0	3·1	2·7	2·4	2·5
Pulmonary death-rates, . .	6·5	8·6	8·6	7·3	5·2
DEATHS—					
Under 1 year,	49	70	71	54	64
60 years and upwards, . .	62	74	62	59	52
DEATHS FROM—					
Small-pox, . . . . .	...	...	...	...	...
Measles,	8	13	11	14	10
Scarlet fever,	6	3	4	4	1
Diphtheria,	2	1	2	...	...
Whooping-cough,	19	16	12	5	12
Fever,	3	2	2	1	3
Diarrhoea,	2	7	7	9	8
Croup and laryngitis, . .	...	2	1	1	1
Bronchitis, pneumonia, and pleurisy,	75	90	92	70	55
CASES REPORTED—					
Small-pox, . . . . .	...	...	...	...	...
Diphtheria and membranous croup,	11	9	13	11	6
Erysipelas,	14	5	46	23	18
Scarlet fever,	56	37	81	75	76
Typhus fever,	8	1	3	2	4
Enteric fever,	8	5	15	8	8
Continued fever, . . . .	...	...	...	...	...
Puerperal fever,	2	2	1
Measles,*	208	91	184	224	295

* Measles is not notifiable.

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ORIGINAL ARTICLES.

A CASE OF CEPHALIC, DYSPHAGIC, OR HYDROPHOBIC TETANUS.

By A. ERNEST MAYLARD, B.S.,
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THERE was admitted into my female ward last January a woman suffering from this somewhat exceptional form of tetanus. So rarely does this peculiar phase of the disease come before us, when contrasted with the frequency of the commoner traumatic forms, that it seemed worth while placing the case on record.

The three names by which this particular form of tetanus is known serve respectively to indicate some prevailing or prominent features connected with it. Thus, it is called "cephalic" because the spasms which manifest themselves are mostly in association with the distribution of the cerebral nerves; and, further, the wound, more frequently than not, is located somewhere on the head. Again, the name "dysphagic" indicates that difficulty in swallowing is a prominent symptom. While the third term, "hydrophobic," suggests the distressing symptom observed in hydrophobia of attempts at swallowing calling forth painful spasms, and the frequent ejection of frothy mucous through the mouth and the nostrils whenever a spasm takes place.

The following is an abstract of the report of the case taken by the house surgeon, Dr. C. E. Fleming:—

Mrs. C., aged 50, was admitted into the Victoria Infirmary on 24th January, 1898, complaining of stiffness of the jaw and inability to open the mouth, of four days' duration.

Ten days prior to admission she had fallen when going down stairs and struck her head against the wall, sustaining a very slight wound over the external and upper part of the left orbit. The "cut" scabbed over, and apparently gave rise to no inconvenience. She continued in her usual health until the fifth day after the accident, when she noticed that her mouth was twisted. On the following day she felt difficulty in opening her mouth, and this difficulty increased to the extent of her being unable to eat anything solid. She had not felt stiffness in her back or in any of her muscles; but complained of a sense of increasing weakness and tendency towards sickness. She states having always enjoyed good health, but confesses to alcoholic excesses.

When examined on admission she presents the appearance of a woman given to drink. She is considerably distressed about her condition, and constantly tries to separate her jaws, which are closed, but not so tightly but that they can be slightly parted. The facial muscles do not appear affected, nor are tonic or clonic spasms observed elsewhere. Over the outer and upper part of the left orbit is a surface scab, indicating a wound of about three-quarters of an inch in length. There is no swelling or redness about the wound, nor any undue tenderness on pressure.

On the day following admission there was but little change observed in her condition; but on the third morning an obvious advance of the disease existed. During the night she was very restless, and complained of great difficulty in breathing, frequently feeling as if she would choke.

At 4 P.M. on the 27th the following note occurs in the Journal—"Since dose at ten o'clock (*i. e.*, chloral) the patient has been sleeping almost continuously, occasionally, however, wakening and having fits of dyspnoea. These fits also seem to be associated with a feeling of constriction across the chest, and a sense of something sticking in the gullet. A few spasmodic efforts are then made to relieve the supposed obstruction, the patient shows signs of great anxiety and distress, the face becomes livid, and frothy mucous is spasmodically ejected through the mouth and nostrils. Swallowing is attempted with difficulty, and frequently sets up a spasm ending in ejection of the fluid. During sleep the facial muscles appear

somewhat relaxed, but on wakening the right angle of the mouth becomes markedly contracted, while the left side suggests facial paralysis."

On the 28th, the fourth day after admission, there seemed to be some improvement in regard to the diminution of spasms, and lessening in difficulty both of respiration and swallowing. She was apparently well under the influence of chloral.

On the 29th, the fifth day, there was recrudescence in the severity of the spasms. During the night, at about 1:30 A.M., she had a severe convulsion, affecting chiefly respiration; the ordinary voluntary muscles, except those of the jaw, were unaffected. Convulsive efforts were made at inspiration, but there seemed to be some obstruction, due apparently to spasm of the glottis, to the entrance of air into the lungs. Her pulse during the attack was very small and uncountable. Her temperature at 9 A.M. was 102° F.

Fits similar to that just described now occurred at frequent intervals, varying, however, much in their degrees of severity. For the first time there was observed some slight arching of the back during a severe dyspnoeic spasm. As a rule, however, she generally sat up in bed when the spasm came on. The symptoms of dysphagia now became so marked that nourishment could not be given by the mouth, for the slightest attempt to swallow at once evoked a spasm. To inhibit the frequency and severity of the spasms chloroform was administered with good effect; but, as the patient reverted to the previous condition on its withdrawal, it was deemed advisable to open the trachea. Tracheotomy was performed by Dr. Fleming at 3:30 P.M. This seemed to afford the necessary relief to respiration, and the spasms, though just as frequent, were observed to affect the muscles of the right side of the face and those of the right side of the neck, so that the head was spasmodically jerked upwards and outwards to the left. Foaming at the mouth was observed during the spasms.

In order to administer nourishment the stomach-tube was passed while the patient was under the influence of the anæsthetic.

On the 30th, or sixth day after admission, she looked much better, the pulse was good, and the morning temperature had fallen to 98° F. A fair amount of nourishment had been administered by the stomach-tube. The spasms, however, had not diminished in frequency, occurring about every half hour. The muscles still affected were those of the left side of the face and neck, the jaw still remaining rigidly closed.

On the 31st, to all general appearances, the patient seemed

not to have lost ground; rather indications of improvement were suggested. The frequency of the spasms, however, remained unabated, but there was no increase in severity, nor extended involvement of other muscles.

At 11 P.M. a marked change for the worse was observed. The breathing became rapid and laboured, and the pulse very weak. The temperature also rose to 102° F. These symptoms increased, and the patient died at 3:40 A.M. on 1st February, shortly after a tolerably severe spasm.

The chief treatment adopted throughout was the free and frequent administration of chloral hydrate in the form of the syrup. At first 20 grs., or 2 drs. of the syrup, were administered every four hours; this on the third day was increased to 20 grs. every two hours, and then the administration continued or stopped according to the effect produced upon the patient. The object aimed at was to keep the patient as continuously as possible under the influence of the drug. On the 27th and 28th she was taking at the rate of 220 grs. in the twenty-four hours, but this soon seemed to have little or no effect in diminishing the spasms, and the continuous administration of chloroform for some hours at a time was then adopted with somewhat better results.

In reviewing the history of this case, it will be observed that the features most marked were those connected with the face, neck, larynx, and pharynx. There were spasms affecting powerfully the right side of the face, while the left side appeared paralysed. The head was jerked upwards to the left, indicating spasms of the right side of the neck. The glottis was spasmodically closed, causing difficulty in inspiration. The pharyngeal muscles contracted, causing difficulty, and finally complete inability, to swallow. With practically one exception, when the back was noticed to become slightly arched during a spasm, none of the voluntary muscles ordinarily attacked in the commoner forms of traumatic tetanus were involved.

As regards treatment, I pursued the course which I have successfully followed in other cases of acute traumatic tetanus of giving chloral hydrate, administered sufficiently frequently and in sufficient quantity to keep the patient in almost continuous slumber between the attacks of spasm. The drug is not given with any idea that it has a specific action; rather that by putting the patient to sleep between the spasmodic contractions, it gives the system sufficient rest until the toxin has had time to exhaust its power, and the tissues have been able to counteract its influences.

The question of excising the cicatrix was discussed, but the perfectly quiescent and healed condition of the wound seemed to suggest the futility of doing so; at the same time it seemed also likely that the disease had already got too great a hold to be affected by any such measure.

The antitoxin treatment was also not lost sight of; but the delay entailed in acquiring the necessary serum from London rendered its adoption practically useless. If the serum is to be of any advantage in traumatic cases, experience so far goes to show that it must be administered early in the attack; and in nearly all cases where it has seemed to have had some beneficial effect, it has been in subacute or chronic cases, and not in the acuter forms.

As regards the prognosis of this particular form of cephalic, dysphagic, or hydrophobic tetanus, it appears, according to the few recorded cases, to be bad. If recovery is to be expected, it must be in those cases where the interval between the injury and the onset of the symptoms is comparatively long, and the symptoms themselves not manifestly severe. These conditions, however, appear to be rare in this particular form of the disease, which must be considered essentially severe in all its aspects, and peculiarly unamenable to all known kinds of treatment. In some instances the spasms become more generalised throughout the trunk, and the case then comes to assume the commoner form of the disease. These cases of extension from the head to the trunk are said to be more fatal than those where the "cephalic" feature exclusively exists. But the symptoms which must be always accepted as grave, whether the spasms be limited or general, are those connected with the difficulty in respiration and in deglutition. In the above case, where the spasms were entirely confined to the head and neck, the dysphagia and the dyspnoea were among the most constant and most severe of the patient's sufferings. In this case, also, as in most others where facial paralysis has been noted, the paralysed muscles were on the same side of the head as the seat of injury.

ON THE PRESYSTOLIC MURMUR.

By JOHN M. COWAN, M.B.,

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THE causation of the presystolic murmur has for long been a disputed point. Of the almost constant connection between it and mitral stenosis no one has any doubt; but concerning the mechanism of its causation many opinions have been expressed. Gairdner and Fauvel thought that it was due to blood flowing from the auricle into the ventricle; while Barclay, Ormerod, and Dickinson, as well as MacVail and many others, have tried to prove that it was regurgitant in its nature. Until recently these were the main theories advanced; but in June, 1897, Brockbank improved upon the latter theory by pointing out that, at the probable time of appearance of this murmur, changes are taking place in the lumen of the auriculo-ventricular orifice and in the tension of the auriculo-ventricular valves. He, however, considered it to be of a regurgitant nature. Some time previous to the publication of his paper the same consideration had occurred to myself, but always with a view to the Gairdner-Fauvel origin of the murmur. And it is this Gairdner-Fauvel-Brockbank mechanism that I shall now try to demonstrate as the cause of the murmur in question.

THE PRESYSTOLIC MURMUR, SO-CALLED.

The presystolic murmur has marked characters. It commences during the long pause, and frequently terminates abruptly with a "snap," which represents the commencement of the first sound of the heart. It is, in its typical form, very loud, and is rough or churning and crescendo in character, the terminal portion being by far the loudest, while its commencement is often so feeble that we may be in doubt as to the exact time of its appearance. The "snap" is synchronous with the apex impulse, as felt by the finger on the chest wall, and the thrill, when present, also terminates then.

With Dickinson's contention that the murmur and thrill are synchronous with the apex impulse we have never been able to agree.

The apex impulse can not be considered to be exactly synchronous with the commencement of ventricular systole, for a certain period must elapse before the muscular contraction starting at the auriculo-ventricular fissure can so

alter the shape and position of the ventricle as to cause the impulse to be felt on the chest wall.

But the apex impulse is felt by the finger on the chest wall to occur at the same moment that the first sound of the heart is heard through the stethoscope, so that the ventricular systole must have commenced for a short period before either the first sound is audible or the apex impulse felt. This may be represented by the accompanying diagram (Fig. 1).

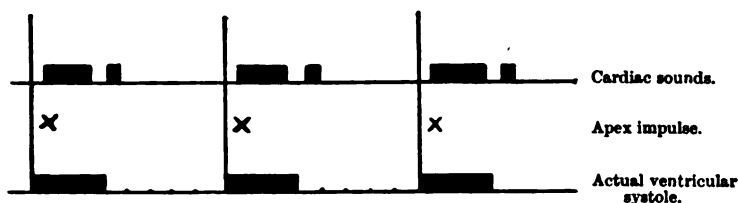


FIG. 1.

Now the murmur in question terminates abruptly with the commencement of the first sound—that is to say, its terminal portion, and that the loudest occurs during the earlier part of the ventricular systole, which may be represented diagrammatically (Fig. 2). So that the murmur is partially ventricular systolic as well as ventricular diastolic in rhythm.

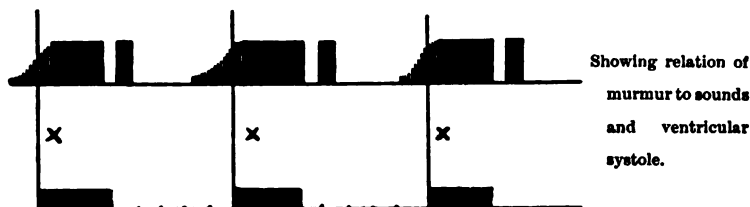


FIG. 2.

That the murmur is regurgitant is, we hold, impossible, for it is mainly ventricular diastolic in rhythm, and its area of distribution is distinct from that of the ordinary regurgitant murmur. The character of the murmur, besides, is different and is much louder, and if it were regurgitant the loud rough portion would be caused by a ventricular pressure infinitely less than that occurring later on when the soft blowing murmur is produced (see tracing of intra-ventricular pressure, Foster, 1893, p. 224).

Under these circumstances we have to consider the causation of a murmur, mainly ventricular diastolic in rhythm, but also partially ventricular systolic, which is not regurgitant in its origin.

During the period when this murmur occurs we have two phenomena taking place—during the earlier portion the auricular systole, and during the terminal part the commencement of the ventricular systole. The auricular systole must play a considerable part in causing this murmur, though various writers have doubted this, asserting that the thin-walled auricle could exert but little force in driving the blood into the ventricle, all the more so as there are no valves in the pulmonary veins by which the blood would be prevented from regurgitating into them. But, as Foster points out, the systole commences in the pulmonary veins themselves before they reach the auricle, and while the pressure in the ventricle at this period is nil, or possibly even negative, there is a certain positive pressure in the veins themselves, increasing rapidly backwards in the pulmonary capillaries and arterioles, the result of the right ventricular systole.

And in the cases which we are now considering these circumstances are intensified, for the right ventricle is always hypertrophied, and, consequently, the pressure in the pulmonary veins, always positive, is much increased, and the auricular walls are hypertrophied as well.¹ *Post-mortem* the auricle may be dilated and thin, but this will only occur during the later periods of the disease, when the stenosis becomes extreme, and the cardiac nutrition fails from a deficient supply of blood through the coronary arteries and imperfect aëration of the blood in the congested lungs, and in these cases the murmur is generally absent, and often a soft blowing systolic murmur only is audible.

The murmur is sometimes far too prolonged to be accounted for by ventricular contraction alone. In a case which I saw recently it began very soon after the second sound and ran right up to the "snap." That the cardiac nutrition generally in this case was good was shown by the fact that the patient, a young girl, had just passed through an attack of bronchopneumonia without any cardiac symptoms, so that the left auricle must have been acting vigorously.

Consequently, as a result we have, immediately preceding the ventricular systole, a quantity of blood at high pressure in the auricle itself, and blood in the ventricle at a low pressure, and this latter condition will be intensified by the difficulty

¹ Cf. Samways, *Brit. Med. Journ.*, 1898, p. 364.

which the auricular blood has had to encounter in entering the ventricle during diastole. Thus, at the commencement of the ventricular systole the pressure of the blood in the ventricle will be slight compared with the pressure of the blood in the auricle, and until the ventricular pressure rises above the auricular pressure as the result of the ventricular systole, the valves will not be closed, and blood will flow into the ventricle from the auricle.¹

This, of course, occurs only for a short period, as the intra-ventricular pressure rises very rapidly, but this period is long enough to permit of the phenomena we are discussing. For simultaneously with the ventricular systole the muscoli papillares and the cardiac muscle as a whole contract and alter the tension of the valve flaps and the shape of the orifice in the act of closing the valve, and as the thickened flaps come more or less into contact the "snap" is heard, which, if the closure be incomplete, will be followed by the soft blowing murmur of mitral regurgitation.²

The exact causation of the first cardiac sound it still disputed, but two factors are probably present—(1) The muscular sound, the result of the unequal tensions occurring during the contraction of the cardiac muscle; and (2) the vibrations of the auriculo-ventricular valves. Quain's views on this subject seem erroneous.³

Sansom explains the "snap" as being due to the closure of the tricuspid valves, where, of course, the blood tension is high.⁴ This occurrence may assist, but the sudden opposition of the hard roughened edges of the mitral valves surely has some part in the production of the "snap."

Thus the murmur of mitral stenosis is caused, in its earlier portion by the blood driven through the thickened valves by the auricular systole, and in its terminal part by blood flowing into the ventricle, whilst changes in the tension of the valves

¹ Broadbent (p. 199) holds that in cases of mitral stenosis where no regurgitant murmur is audible, while *post-mortem* "button hole" stenosis is found, of such a character as to preclude the possibility of closure of the valves occurring, regurgitation is prevented simply by the high tension in the auricle.

² Haycraft and Paterson (*Jour. Physiol.*, xix, p. 262) show that the muscoli papillares contract synchronously with the ventricle. D. MacAlister has pointed out that the auriculo-ventricular orifice is formed in large measure of muscular fibres, and, consequently, lessens in size with the ventricular contraction. Parchappe has long held that the valves are mainly closed by being drawn downwards together, so that their tension must be greatly altered.

³ Boyd, *Scottish Med. and Surg. Journ.*, October, 1897.

⁴ Sansom, *Diagnosis of Diseases of the Heart*, 1892.

and alterations in the lumen of the orifice are taking place, the result of the contraction of the ventricle as a whole, and of the muscoli papillares in particular. When the edges come suddenly into opposition the "snap" is heard, and if the closure be incomplete a systolic regurgitant murmur will then be audible. In many cases the murmur is very short though still characteristic enough; in these cases the auricular systole is of itself insufficient to cause a murmur, which, however, is produced as the valves become affected by the action of the muscoli papillares.

ALTERNATING PRESYSTOLIC AND SYSTOLIC MURMURS.

Cases occur where, when the heart is acting easily, only a systolic murmur is audible, but if, by exercise or otherwise, cardiac action be stimulated, the presystolic murmur appears, and the systolic one becomes weaker, or even disappears entirely. What happens in these cases is that the muscoli papillares, and the cardiac muscle generally, are not acting sufficiently strongly, and the tension of the valves and the shape of the orifice are not sufficiently rapidly altered to produce the presystolic murmur. When cardiac action is stimulated, they act more forcibly and suddenly, and the sudden alteration which then occurs gives rise to the presystolic murmur. If by the greater cardiac force applied, the orifice is occluded, regurgitation ceases, and with this the systolic murmur. I cannot understand how increased cardiac power can be supposed to make a systolic regurgitant murmur suddenly become a presystolic regurgitant murmur, *i. e.*, how it can by itself suddenly shift the time of appearance of the murmur and antedate it, so to speak, by a definite fraction of time. If the two murmurs were supposed simply to replace one another in point of rhythm, the explanation might be accepted, but the alteration of rhythm, as well as of character, negatives it.

Brockbank points out that in some cases two to three weeks before death a presystolic murmur may be audible alone, but as death approaches it disappears, and a systolic murmur becomes apparent. The explanation of this is, of course, obvious on the above grounds.

THE ASSOCIATION OF DIASTOLIC AND PRESYSTOLIC MURMURS.

The diastolic murmurs in these cases are due to the flow of blood through the stenosed valves while no alteration in their

shape or tension is occurring in them, *i.e.*, before the ventricular systole commences. In these cases the pulmonary circulation is of high tension, and the left ventricle is acting weakly. As cardiac strength returns, so does, as a rule, the presystolic murmur.

The above theory may be applied to the murmurs which are sometimes heard, similar in character to those of mitral stenosis, but where no mitral obstruction is found *post-mortem*. These murmurs have been mainly found in cases of aortic incompetence or of adherent pericardium, and Phear has pointed out that in the different sets of cases where it has been observed there are two features noticed which are common to both. There has been antecedent inflammation in the cardiac apparatus, and the ventricle is dilated. And if we suppose that from the former of these conditions some damage has been done to the chordæ tendinæ or muscoli papillares, from which either an actual or a relative shortening of these structures results, we would have the valves held taut, away from the ventricular walls, and so an actual mitral stenosis caused which would produce a murmur in the manner described above; and the necessity of two distinct factors being present for its production—damage to the chordæ tendinæ or muscoli papillares and ventricular dilatation—would account for its rarity.

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- Barclay, *Lancet*, 1872, i, p. 283.
 Dickinson, *Lancet*, 1887, ii, p. 650; 1889, ii, p. 779.
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ON THE FORMATION OF GASTRIC DIVERTICULA.¹

By JOSHUA FERGUSON, M.A., M.B., PAISLEY.

IN recent years considerable attention has been directed to the occurrence of diverticula in the various regions of the alimentary tract. While far from frequent, these pouches have been noted in pharynx, œsophagus, and intestine in such

¹ Read at a meeting of the Glasgow Pathological and Clinical Society held on 13th December, 1897.

numbers and associations as to remove them from the category of morbid freaks and give them a definite pathological standing. But in the stomach they are even relatively rare; an examination of the literature of the subject has yielded the records of only eleven instances. This relative exemption of the stomach is apparently due to its specially strong musculature, and (in comparison with the upper portions of the tract) to its freedom from surface attachments and to its range of mobility.

Such instances as have been recorded do, however, illustrate some interesting etiological points. Theoretical considerations suggest that a diverticulum of a hollow muscular viscus like the stomach may be produced in either (or conceivably both) of two ways—first, by a force of pulsion acting from within the organ; and, second, by a force of traction acting from without—the incidence of the disproportionate pressure being in each case upon a circumscribed area of the stomach wall. And, as a matter of fact, all our cases may be explained in these lights. A congenital origin might be admitted as possible on embryological grounds, but no example has been observed.

In regard to the first type—that of *pulsion diverticula*—it is obvious that in normal circumstances there is no tendency to local bulging of the stomach wall, for the reason that its tension is equal from point to point throughout the phases of peristalsis. But if the strain upon a definite local area be increased in consequence of some adventitious stress, the wall may yield. Or if a circumscribed portion of the wall be weakened, through traumatism or disease, the same tendency may ensue. The former condition has arisen in connection with the prolonged retention of foreign bodies in the stomach, and some curious cases of its occurrence are on record. Thus, Helmont¹ found a pouch in a stomach stuffed with stones. Fournier² found in the hugely dilated stomach of a glutton a sac-like protrusion of the wall which contained several solid bodies, including pieces of wood, a pewter spoon, and a pocket knife. Voigtel³ describes a similar appendix of the stomach containing wood, glass, nails, a knife, &c.—articles which he naively classes as indigestible. Fritze⁴ found a diverticulum in which seven cooked beans had lain for over two months.

¹ Helmont, quoted by Moebius, *Fundamenta Physiol.*, cap. x, p. 137.

² Fournier, *Journal de Médecine*, tome xiii.

³ Voigtel, *Handbuch der Path. Anat.*, 1804, § 512.

⁴ Fritze, *Sammlung der Auserlesenen und neuesten Abhandlungen f. Wundärzte*, st. xxii, p. 217.

And Matthew Baillie¹ writes:—"I have seen one instance of a pouch [of the stomach] . . . in which five halfpence had been lodged. The coats of the stomach were thinner at that part, but were not inflamed or ulcerated. The halfpence had remained there for some considerable time, forming a pouch by their pressure, but had not irritated the stomach in such a manner as to produce inflammation or ulceration." This specimen is now in the Hunterian Museum, and the "five halfpence" are still extant, to bear silent testimony both to the credibility of Baillie's description of his specimen, and to the honesty of its subsequent curators.

In these cases the normal centrifugal strain upon the stomach wall is reinforced over a limited area by the gravity of the foreign bodies. The solid body, in virtue of its continuous presence, exercises a constant pressure which ultimately overcomes the wall's elasticity. And once the wall begins to yield, the tendency to bulge will be aggravated from time to time by the regular ingestion of food. This explanation is confirmed by the fact that in each of the cases quoted above the diverticulum has been formed at the most dependent portion of the stomach—viz., the middle of the great curvature.

In other examples of the pulsion diverticulum, there is a local weakening of the wall; and at this "place of diminished resistance" the pouch is produced. Thus Vasquez² describes the case of a soldier who was severely kicked in the belly by a horse. After several months' residence in hospital he died (apparently from intestinal obstruction). *Post-mortem* the stomach was found to be reduced in size; but at its upper and right aspect a large diverticulum was found, constituting an annexe of a size equal to a fourth of the normal organ. This sac had formed adhesions with the œsophagus, and several small fistulæ existed between the two cavities. In this case direct injury, short of actual rupture, had been done to the stomach wall; permanent weakening of a circumscribed area had resulted, and ultimately the pouch described had been produced.

In the other cases of this type, the diverticulum has arisen in association with chronic gastric ulceration. One might readily imagine that the floor of a healed gastric ulcer would furnish an ideal and frequent site for the formation of such protrusions. But this has occurred in only one of our series

¹ Matthew Baillie, *The Morbid Anatomy of some of the most Important Parts of the Human Body*, London, 1793.

² Vasquez, quoted in Schmidt's *Jahrbuch d. Med.*, B. 112, p. 158.

of cases. The specimen is described by Kleine:¹ the ulcer was a large chronic one, abutting on the pylorus, and running upwards on both sides towards the smaller curvature. Its base presented an irregular cicatricial aspect, and considerable stenosis of the pyloric orifice existed. In the middle of its base was the diverticulum, which had a contracted mouth, was about the size of a cherry, and presented externally near the pylorus upon the outer side of the great curvature. Its inner lining was composed of irregular scar tissue, and its wall showed mainly muscular elements.

The great rarity of this particular sequel to gastric ulceration is apparently due to the fact that where the stomach wall has been thinned and weakened by long continued ulceration, a conservative perigastritis has often occurred, and permanent adhesions have been formed to adjacent tissues or organs. Thus Orth² describes a case (also quoted and discussed by Kleine³) in which a large almost annular ulcer had existed in the pyloric area; dense adhesions had formed (in consequence of perigastritis) between the pyloric part of the stomach and the indurated omentum, colon, mesocolon, and the left lobe of the liver. A small area of the stomach wall had, however, escaped involvement in the adhesions; and at this point—lying between the pylorus and the margin of the ulcer, and projecting from the greater curvature and the anterior wall of the organ—was a large diverticulum, communicating with the cavity of the stomach by an aperture capable of admitting four fingers. It was lined with thinned mucous membrane, and had therefore been formed outwith the bounds of the ulcer itself. Pyloric stenosis was very manifest. Another instance, very similar in its leading aspects, is also given by Kleine.⁴

These cases, then, of pulsion diverticula are associated with the presence of chronic ulcers in the neighbourhood of the pylorus, and with consequent pyloric stenosis. The normal driving force of the stomach muscle is intensified (within limits) in proportion to the increased resistance to be overcome at the narrowed aperture of exit; the increased stress is spent mainly upon the walls of the pyloric end; and at any "place of diminished resistance" the tendency to yield will ultimately

¹ Otto Kleine, "Ueber Blindsackbildung am Magen . . . III Fälle von Blindsackb. bei chron. Magengeschwüren" (Inaug. Dissert.), Göttingen, 1895.

² Prof. Orth, *Arbeiten aus dem Patholog. Institut in Göttingen*, Berlin, 1893, p. 63.

³ Kleine, *op. cit.*

⁴ Kleine, *op. cit.*

occur. In one case, this site has been found in the ulcer floor; in the others, where the ulcer floor has been adventitiously buttressed by external adhesions, it is the otherwise healthy wall between the indurated borders of the ulcer and the rigid pylorus that has been overstrained.

Of *traction diverticulum* of the stomach only two cases are known to have occurred; but the conditions of its formation are apparently analogous to those that determine the production of the similar deformity of the œsophagus. That is to say, during the course of inflammatory processes which have their seat external to the viscus in question, but in its immediate vicinity, adhesions may become formed to a circumscribed portion of the wall of the organ. Bands may thus be formed, which anchor the implicated part of the wall to adjacent structures that are more rigid and fixed. If cicatricial contraction ensues, a continuous gradual pull upon the more yielding muscular wall is established, and, in such cases as those under review, a permanent deformity results. Once, too, the traction-recess has been created, the same forces that operate in the formation of the pulsion diverticulum (as described above) will tend to enlarge the diverticulum from within.

In the case of the œsophagus, the lymphatic glands in its immediate neighbourhood are frequent foci of inflammation. The stomach is in much less intimate relation to structures that are prone to morbid changes of the type referred to. In front, there is none such, except in the pyloric region, where the gall-bladder is known in one instance to have been the *fons mali*. Posteriorly, the pancreas is often diseased, and there are also lymphatic glands in this region which might conceivably give origin to traction bands. Two instances of this type have been recorded. Tilger¹ describes a specimen found *post-mortem* in the body of a woman, aged 46, who had died from carcinoma uteri. Near the attachment of the small omentum and close above the pylorus a diverticulum had been formed. It was of rounded shape and about the size of a walnut; it communicated with the gastric cavity by a narrow mouth, 3 mm. in diameter, and was bound down behind and below to the gall-bladder by fibrous adhesions. The gall-bladder was notably displaced and deformed; it was shrunken, and reduced practically to a thin cord with an extremely narrow lumen. The biliary ducts were also abnormal in

¹ Tilger, "Ueber einen Fall von Traktionsdivertikel der Pylorus-region des Magens durch Gallenblasenverlagerung," *Virchow's Archiv*, cxxxiii, 1893, p. 201.

many details. After a minute investigation of all the features of the case, Tilger concludes that there was presented here a congenital lesion of the gall-bladder, due not to arrest of development, but to intra-uterine inflammation; that adhesions with the stomach wall near the pylorus had been established, and a traction diverticulum finally formed. Heubel¹ records and discusses at great length a most interesting case. The patient was a man, aged 53, who died from diabetes. The sectio showed, *inter alia*, the presence of a diverticulum, situated about the middle of the lesser curvature of the stomach, but rather towards the pylorus and the posterior surface. Its mouth was 5 to 6 mm. wide, and its depth about



Cardiac end of stomach showing origin of the diverticulum near the oesophagus.

4 cm. Through its apex a probe could be passed into the tissue of the pancreas and thence into the pancreatic duct. The tissues at the apex of the diverticulum were adherent to those of the pancreas. The pancreas was the seat of pronounced disease; it was small and distorted, contained numerous concretions, and showed, in addition, marked signs of interstitial inflammation. The formation of the communication between the stomach and the duct of Wirsung had evidently occurred in consequence of ulceration or necrosis after the traction diverticulum had developed.

¹ Heubel, "Ueber ein mit dem Ductus Wirsungianus Communicirendes Traktions divertikel des Magens" (Inaug. Dissert.), Leipzig, 1895.

The case now illustrated presents some features that differ from any of those already cited. The patient at whose necropsy the stomach was obtained was a man, aged 34, who died from exhaustion during acute mania. He had been a glutton and a drunkard. Old syphilitic cicatrices were present on the tongue and in the skin of the lower extremities, and gummata were found in kidneys, spleen, and brain. The stomach was distended with gas; about 2 oz. of grumous fluid were also present. The whole organ showed the signs of chronic dilatation. The mucous membrane was wrinkled and crenated, but gave no evidence of ulceration. It was flecked with mucus. The anterior wall was of normal thickness; but many regions of the posterior wall were extremely thinned and translucent. At the cardiac end, in the line of the greater curvature, and about 5 cm. from the orifice, a diverticulum was situated. With the viscera *in situ* it presented externally as an ellipsoidal pouch, of the size of a plover's egg, placed at the upper and outer aspect of the cardiac region, and lying freely between the folds of the gastrophrenic ligament so that it abutted on the diaphragm and was devoid of peritoneal covering. It communicated with the gastric cavity by a slightly contracted circular mouth which admitted the forefinger. The greatest transverse diameter was 2 cm., and its length 3.5 cm. Its walls for the most part were extremely thin. Its internal lining was smooth, and in unbroken continuity with that of the stomach. Its contents were wholly gaseous.

I am indebted to Dr. L. R. Sutherland for the following report of a microscopic examination of the structure:—

"Sections of the wall of the diverticulum, including the adjacent portion of the stomach wall, show, on microscopic examination, the following structural alterations:—

"There is thinning of the mucous membrane of the stomach and evidence of catarrhal inflammation.

"On tracing the various coats of the stomach into the diverticulum, it is found that the mucous membrane may be followed as a continuous layer to the apex of the protrusion. In its passage outwards it undergoes a striking and progressive diminution in thickness. Thus, at the apex of the diverticulum, the layer is less than an eighth of the thickness of the gastric mucous membrane.

"Beneath the glandular surface is a muscular layer—the muscularis muscosa. This also forms an uninterrupted covering, and shows a corresponding progressive diminution in

thickness. At the apex of the diverticulum it is represented merely by two or three parallel rows of muscular fibres.

"The submucous layer forms the greater part of the thickness of the diverticulum, and contains in its loose fibrous tissue some blood-vessels of very considerable size.

"The inner muscular coat of the stomach is continued for a distance of about 2 mm. into the diverticulum, in the form of a few small isolated bundles of fibres. Beyond this point every vestige of this layer has disappeared.

"The outer muscular layer terminates somewhat abruptly at a point corresponding with the margin of the orifice of the diverticulum.

"The serous covering cannot be definitely recognised as a distinct layer in the portion of tissue examined."

In consideration of the possible causes which have led to the formation of this diverticulum, it is apparent that the factor of traction may be eliminated—in view of the anatomical relations, the absence of cicatricial adhesions and the deficiency of the muscular layers of the stomach in the wall of the pouch. Again, its situation alone excludes the chance of its production by a solid foreign body—the existence of which is otherwise not in question. And, again, the site of the protrusion and the absence of any evidence of cicatricial tissue prove that it did not take origin in the floor of a healed ulcer. The possibility of congenital origin need not be discussed. It is essentially a pulsion diverticulum, and may be briefly characterised as a hernia of the mucous membrane of the stomach through the muscular coats.

Two suggestions may be made, either or both of which may throw light on its causation. (1) It may be taken in connection with the generally dilated character of the stomach, and with the special atrophy of patches of the muscular coats on the posterior wall. If a similarly thinned patch existed at the site afterwards occupied by the diverticulum, a circumscribed area of diminished resistance would be created, and upon this the forces of pulsion would play, intensified in this instance by the habitual ingestion of enormous quantities of food and drink. (2) It may be compared with the diverticula of similar structure that are frequently met with in the intestine. Their causes are, to some extent, obscure; but as they are almost invariably situated in the line of mesenteric attachment, it has been suggested with reason that as this line gives ingress and egress to the intestinal blood-vessels, and as thereby the muscular coats are broken or perforated, the wall

is weaker in this particular region than elsewhere in the periphery of the gut. The homologous locus in the stomach is the line of the great curvature; it is in this line that our diverticulum has been formed; it is near its site of origin that the left gastro-epiploic artery and vein enter and leave the stomach wall. And it is therefore conceivable that, unique as the occurrence is, the desiderated "place of diminished resistance" has thus been provided.

Obituary.

JOHN CHARLES GRANT DUFFUS, M.A., M.B., C.M.

THE brief announcement in the daily press of 8th February, 1898, of the death of Dr. J. C. G. Duffus, late of Springburn, must have come as a surprise of the very saddest nature to all who knew him. He died in the North London Hospital of scarlet fever of a most malignant type. Admitted to the hospital on the 4th February, he died the following afternoon from cardiac failure.

Dr. Duffus settled in Springburn about ten years ago, succeeding to the practice of Dr. Dougan. He rapidly gained the confidence of a large *clientèle*, and equally soon acquired the esteem and affection of a large circle of acquaintance in the profession. His genial manners, his unvarying honesty and uprightness of character soon gained him a warm corner in the hearts of all who knew him. It was a source of regret to many when he decided, a few months ago, to leave Springburn and settle in London: he went with high hopes—never to be realised.

Dr. Duffus was 35 years of age. He was educated in his native place, Cullen, and went as a bursar to King's College, Aberdeen, where he graduated in arts in 1882, with first-class honours in natural science, and with the Seafeld gold medal in English literature. In 1886 he graduated in medicine with highest honours, having taken the Shepherd memorial gold medal in surgery, together with prizes and medals in nearly all the medical classes.

After graduation he was appointed house surgeon to the Aberdeen Royal Infirmary, at the time when the internal

administration of the hospital underwent a complete change; and it was recognised by the Committee of Management, by the medical and surgical staff, that his tact and conspicuous ability in the discharge of his duties during the transition stage were of the greatest assistance, and were much appreciated. Subsequently he studied in Vienna, and on entering on practice held the position of house surgeon in the Perth Infirmary for two years.

Though he soon became immersed in the trying work of a large general practice, Dr. Duffus was fond of hospital work, and more especially of surgery, for which his varied and extensive preliminary training had so well fitted him. His appointment to the staff of the Glasgow Royal Infirmary enabled him to gratify his desire, and he keenly appreciated his opportunities of study in the out-patient department and as assistant in the wards of Dr. Knox. He had numerous public appointments in Springburn.

Dr. Duffus married in 1895 the daughter of the late Rev. Mr. Clark, Free Church minister of Foveran, in Aberdeenshire.

CURRENT TOPICS.

ANDERSON'S COLLEGE MEDICAL SCHOOL, GLASGOW.—Dr. Joseph Carroll, M.B., C.M. Glasg., D.P.H. Camb., has been appointed Lecturer on Hygiene and Public Health at this school in room of the late Dr. J. Pearson Munro. Dr. Carroll has been for the past ten years medical officer of health for the burgh of Ilkeston. He has lectured on sanitary subjects for the Derbyshire County Council, and has been for some years a member of the County Health Committee.

A CURIOUS LITERARY COINCIDENCE.—It is rather curious that *Trewinnott of Guy's*, the first book published by Mr. John Long, the new publisher, should be by Mrs. Coulson Kernahan, whose husband's work, *The Child, the Wise Man, and the Devil*, was selected by Mr. James Bowden as the first book he issued. A feature which marks out *Trewinnott of Guy's* from the generality of novels is that it deals with medical life, concerning which it is strange how few stories have been written. The dedication has been accepted by

Sir Samuel Wilks, Bart., President of the Royal College of Physicians, with whom Mrs. Kernahan's first husband, the late G. T. Bettany of Guy's Hospital and Caius College, Cambridge, collaborated in writing the history of Guy's Hospital. Her first novel, *The House of Rimmon*, was an emphatic success, three editions being sold, so her new work will be looked forward to with much interest in literary and medical circles.

THE SANITARY INSTITUTE.—The Council have accepted an invitation from the Lord Mayor and City Council of Birmingham to hold its seventeenth Congress and Exhibition in that city in September next.

THE ROYAL PHOTOGRAPHIC SOCIETY is organising an International Exhibition of Photographic Apparatus and Photographs, which will open at the Crystal Palace on 27th April.

In addition to the usual displays of pictures, &c., the leading firms, manufacturers, and dealers will be largely represented. There will also be extensive loan collections, illustrating not only the history of photography but its enormous scientific and commercial applications, photo-mechanical processes, photographs in colours, photographs by means of the x -rays, and kindred exhibits.

The Exhibition, the arrangements for which are in the hands of a joint committee of members of the Society and exhibitors, bids fair to be the largest and most interesting collection dealing with photography which has ever been got together.

STERILIZED MILK.—We have pleasure in informing our readers that carefully sterilized milk, put up in bottles from which air has been excluded, may be had from G. M. Wilson, Todbank, Dunfermline. We have personally tried the milk, and found it excellent. The same firm also prepares, by Dr. Gaertner's process, humanized milk in bottles, and this may be worthy of the attention of those in search of suitable infant's food.

ARMY MEDICAL SERVICE.—The following is a list of the successful candidates for commissions in the Army Medical Staff at the examination held in London on 4th and 5th February, 1898 (arranged in the order of merit):—W. H. S. Nickerson, A. E. Walter, G. S. Nickerson, A. E. Weld, J. S.

Gallie, G. B. Crisp, H. B. G. Walton, W. Jagger, A. B. MacCarthy, R. Selby, A. E. Thorp, E. J. Dobbin, A. R. O'Flahertie, H. Herrick, C. W. Mainprise, G. J. S. Archer, R. S. H. Fuhr, H. O. Hall, F. J. C. Heffernan, J. Cowan, and E. P. Hewitt.

From the list of papers set at this examination, forwarded to us for publication, we select those in the subjects of medicine and pathology and surgery as likely to be of some interest to our readers:—

MEDICINE AND PATHOLOGY.

1. What is your opinion with regard to the following case; give the grounds for your diagnosis; say what treatment you would recommend; and, in the event of a fatal issue, what would you find *post-mortem*:—

A soldier, æt. 32, was admitted into hospital on 4th December, 1897. He stated that he had always enjoyed fair health, but admitted that he had led a very irregular life. He complained of debility, some loss of flesh, excessive urination, and, above all, of a right internal squint of some weeks' duration; indeed, it was this which induced him to seek advice.

On examination he was found to be pallid, rather weakly, and slightly emaciated, but there was no fever. The internal squint was pronounced, and he was quite unable to turn the eye outwards. There were no head symptoms, and the heart and lungs were healthy, while the digestion was fair. But the liver was greatly and uniformly enlarged: it felt very firm, and was not the seat of either pain or tenderness. The urine was very pale, 120 ounces per day, specific gravity, 1013: it contained a small quantity of albumen, and an occasional granular or hyaline tube cast was discovered in the scanty deposit.

Finally, on one shoulder there was a patch of eruption, about the size of the hand, which had appeared about eight months before admission. It was composed of tubercles of a dusky red tint, with here and there an admixture of violet. Some of these had ulcerated and were capped with greenish crusts. The edge of the patch was rounded, abrupt, and elevated.

2. About what day of the fever does the eruption make its appearance in the following diseases—

- (a) Rubella (German measles)?
- (b) Morbilli (measles)?
- (c) Scarlatina?
- (d) Typhus?
- (e) Enteric fever?
- (f) Varicella?
- (g) Variola?

3. How would you treat typical uncomplicated cases of—
 - (a) Lead colic ?
 - (b) Ulcer of the stomach ?
 - (c) Acute tubular nephritis ?
4. Write down what you know with regard to Beri-beri.

SURGERY.

1. Enumerate the complications which may occur in a case of otitis media. Give the symptoms and treatment of abscess of the temporo-sphenoidal lobe dependent upon this cause.
2. Write an account of the course of a case of typical syphilis. Give the treatment you would adopt, and mention any matters of importance in arriving at a prognosis.
3. Mention two causes which produce ulceration of the cornea ? Give a brief account of the treatment you would adopt in each case, the possible complications which may result, and the manner of dealing with them.
4. Give a description, pathological as well as clinical, of a case of carcinoma of the breast. Describe the varieties of the disease met with, and in the event of an operation being performed, mention any operative details you consider important.

MEETINGS OF SOCIETIES.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.

SESSION 1897-98.

MEETING III.—26TH NOVEMBER, 1897.

The President, DR. G. S. MIDDLETON, in the Chair.

I.—REPEATED OPERATION FOR RECURRENT SARCOMA.

BY DR. DALZIEL.

Dr. Dalziel showed a patient on whom seven operations had been performed for sarcoma originating in the orbit and giving rise to secondary growths in the cheek, over the mastoid in the upper lip, in the superior maxilla, and in the pterygoid processes. The whole of the orbital contents had been removed four years previously for primary sarcoma of the lachrymal

gland. The bone of the outer and lower margins of the orbit had been removed and the part packed with chloride of zinc paste, which led to a further slough of tissue round the sphenoidal fissure. Three months later a nodule appeared in the cheek, and this was removed in a V-shaped portion of the entire tissues of the cheek. Six months later a growth appeared over the mastoid, and was freely removed together with the surface of that bone, to which it was adherent. A year afterwards a nodule appeared in the upper lip. Subsequently the left superior maxilla was removed with the soft palate and the pterygoid processes. Since the last operation, fifteen months ago, the patient had enjoyed excellent health, and though suffering from the absence of the superior maxilla and an aperture in the cheek equal to a halfpenny in size, due to the removal of the soft parts, she yet leads a very useful and comfortable life. After the lapse of another six months, it was proposed to introduce an artificial patch of cheek. All the sarcomatous tissue removed was found to be of the small round-celled variety. There was no evidence of visceral lesions.

II.—SPECIMENS.

A. BY DR. WORKMAN.

1. *A specimen from a case of primary malignant disease of the liver.*—William H., a labourer, aged 51, admitted 18th August, 1897. The disease was diagnosed as cirrhosis of the liver.

Summary of Clinical History.—The patient complained of swelling of abdomen and legs of three months' duration.

Personal History.—Has always been a healthy man. No history of syphilis.

Present Illness.—The first thing noticed was swelling of the legs. He got cold though working in a draught. The abdomen began to swell, and he had pain in the back at the same time. No jaundice. No pain in the abdomen. He lost flesh considerably during the course of his illness. No definite history of alcoholism.

Condition on Admission.—Patient emaciated. The skin has a peculiar bronzed appearance; it appears in parts dark brown or almost olive-green. The mucous membrane of the lips is free from pigment. Heart and lungs normal. Abdomen is considerably distended, the umbilicus retracted. Percussion gives a dull note in both flanks, clear in front. A distinct thrill is obtained on combining palpation with percussion. No

definite enlargement of the liver can be made out. The spleen is enlarged. The temperature is normal.

The abdomen was tapped on 17th September and 128 oz. of fluid withdrawn; again, on the 22nd, when 8 oz. were withdrawn; and on the 27th, when 338 oz. were taken away. The patient died on 3rd November, 1897, at 10 P.M.

Extract from Post-mortem Reports.—"The body is that of a greatly emaciated man, subcutaneous adipose tissue being almost entirely absent. *Post-mortem* rigidity passing off. The heart, except for some brown atrophy of its muscular tissue, and the absence of fat from its surface, presents healthy characters; the endocardium is bile-stained. The commencing aorta is atheromatous, and shows calcareous patches. The lungs are somewhat cedematous.

"*Abdomen.*—On opening this cavity a large amount of bile-stained ascitic fluid escapes. The omentum and mesentery contain but little fat. The stomach is of fair size and normal in position, its mucous membrane is congested, but the organ is otherwise healthy. The duodenum is also quite healthy. The gall-bladder is large, and contains bile of light yellow colour, which escapes easily, on pressure, into the duodenum.

"The liver seems to be retracted upwards, and lies almost entirely above the level of the border of the ribs and costal cartilages. It is rough and nodulated in form, and very dense in consistence. A distinct tumour mass is found on its upper surface, closely adherent to the diaphragm, and about the size of a hen's egg. On cutting through this into the liver, the organ is seen to be infiltrated by tumour tissue, especially its left lobe. The right lobe also shows a few foci, and is distinctly the seat of a coarse or multilobular cirrhosis.

"The portal vein, as it passes to the liver, is greatly dilated and thrombosed, the thrombus being evidently in part tumour-formation within the vessel.

"The spleen is much enlarged and of very firm consistence, probably due to passive hyperæmia from obstruction of the portal vein. The hepatic and cystic ducts, as well as the common bile duct, are patent.

"The pancreas is atrophied and of firm consistence, but no tumour tissue can be found in it. The suprarenal bodies are healthy. The kidneys are congested, but otherwise they appear healthy. The intestine is carefully examined throughout, but except for moderate congestion it presents no abnormality. The urinary bladder is healthy; it contains deeply bile-stained urine.

"*Weights of Organs.*—Heart, 7½ oz.; right lung, 26 oz.;

left lung, 18 oz. ; liver, 51 oz. ; spleen, 14 oz. ; kidneys together, 10 oz."

From the tumour masses in the liver, and also from that in the portal vein, I prepared sections, after hardening in formol and then in alcohol, by embedding the tissue in celloidin. These I stained with Ehrlich's acid hæmatoxylin, and afterwards with a solution of acid fuchsin and picric acid, according to a method recommended by Van Gieson, and which I find very useful for demonstrating such tissues; then I cleared them with aniline oil, xylol, and pure xylol, and mounted them in canada balsam.

The sections show that the tumour consists of large epithelioid cells with large oval nuclei; the cells are irregular in shape, and are arranged in columns and masses resembling gland structure.

The cells and nuclei of the masses in the liver itself are somewhat larger than those of the masses in the portal vein, but the arrangement is very similar.

In the liver the masses appear to compress and push to the side the ordinary lobular structures, and around and in the neighbourhood of them there appears to be great hyperplasia of the connective tissue of the portal areas, causing a very pronounced multilobular cirrhosis; in some parts there is also very considerable round-cell infiltration.

The masses in the dilated portal vein consist of rather smaller cells with smaller nuclei, the amount of connective tissue between the columns and masses is also less, so that here the tumour resembles a lympho-sarcoma. These masses come into very close relation to the vessel wall. No endothelium is to be seen separating them from the muscular coat of the vessel.

The masses in the liver itself have all the characters of an adeno-carcinoma, while the tumour tissue in the vein might be looked upon as an endothelioma taking origin from the lining wall of the vessel, or as a lympho-sarcoma bursting into it from the neighbouring connective tissue or the lymphatic glands in the fissure of the liver.

If the tumour is a primary cancer of the liver, it is hard to understand how it could make its way against the current and appear in the dilated vein outside the organ. If the tumour took origin either in the vein or in the tissues of the fissure, it is easy to understand how it would give rise to secondary nodules in the liver.

Along with the microscopic sections, Dr. Workman exhibited slices of the liver, which are preserved in glycerine and water,

after fixing in formol and treating with alcohol and then with acetate of potash-glycerine. These retain very nearly the colour of the fresh organ, and show the structural appearances very beautifully to the naked eye.—(Royal Infirmary Pathological Reports, No. 1,751.)

Dr. Middleton asked what *Dr. Workman* meant by secondary cirrhosis.

Dr. Workman—A cirrhosis due to pressure and consequent interference with the functions of the organ—in other words, a proliferation of connective tissue due to the irritation caused by the tumour.

Dr. Middleton then said that the case recalled to him another, which had been diagnosed as a renal affection. Death had been supposed to be due to uræmia. A cirrhotic liver was discovered at the autopsy, and the portal vein was found to be occluded by an old plug.

2. *A specimen from a case of secondary malignant disease of the liver.*—George G., aged 65, who was occupied as a pitheadsman, admitted to the hospital on the 13th September, 1897, suffering from pain in the abdomen of ten weeks' duration. Patient had been a soldier, and was in South Africa; had not suffered from malaria, dysentery, syphilis, nor excessive alcoholism.

History of Illness.—Symptoms began ten weeks ago with pain in the abdomen, and he noticed that his abdomen was becoming swollen. He vomited everything he took; this vomiting lasted for six weeks; on several occasions he vomited blood. He had diarrhoea, the bowels acting five or six times daily; he frequently had blood in the motions, the blood being bright red in colour. The pain in his abdomen became worse, and patient stated that it had a gnawing character. Two weeks before admission his legs became swollen; he was short of breath, and could only lie on his right side; he had gradually been losing flesh.

Condition on Admission.—The patient was thin and emaciated; great œdema of legs; no jaundice; lungs normal; heart normal, there was a suspicion of a V.S. murmur heard over the apex. The abdomen was greatly distended, the liver was greatly enlarged and easily felt, as it extended fully 2 inches below the costal margin. The liver dulness in the nipple line was 8 inches broad. Spleen was enlarged and palpable. A small round mass could be felt about half an

inch above and to the left of the umbilicus. There was some ascites. The temperature was normal; the urine acid, and it contained urates, but no albumen. On the 20th September, 1897, there was no improvement in the patient's condition. The liver was greatly enlarged, probably from malignant disease. No jaundice observed. The night before patient had become somewhat delirious. There was gnawing pain in the abdomen, aggravated by pressure; blood was several times observed in the motions. The patient died on the 23rd September, 1897.

Extract from Post-mortem Journal of 24th September, 1897.—"The body was that of a well-developed, but greatly emaciated man, with extreme general anasarca; the abdomen especially contained a large amount of fluid, which was blood-stained. There was some jaundice, especially of the face. In the thorax the pericardium was seen to contain a small quantity of serum. The pleuræ also contained some fluid. The heart presented fairly healthy characters. The lungs were of small bulk, their bases being collapsed, while the anterior and upper portions were slightly emphysematous at the margins. The bronchi revealed signs of old and of recent bronchitis. On opening the abdomen the liver was found to be enormously enlarged; it extended considerably below the umbilicus. The enlarged organ was the seat of very extensive secondary cancer, being fully four times the usual size. On cutting into it the right lobe was found to consist almost entirely of cancerous tissue undergoing necrosis. The stomach was a little congested, and there was *post-mortem* digestion of its mucous membrane. The duodenum and the pancreas were healthy, as was also the spleen. There was a cancerous mass in the sigmoid flexure of the colon, annular in form, and almost surrounding the lumen of the bowel. The mucous surface was ulcerated, and the tumour presented all the characters of a columnar-celled epithelioma. The rectum and the bladder were healthy. The kidneys were slightly congested, but otherwise appeared healthy.

"*Weights of the Organs.*—Heart, 8½ oz.; right lung, 16½ oz.; left lung, 18 oz.; liver, 222 oz.; spleen, 2½ oz.; kidneys together, 9 oz."

A portion of the greatly enlarged liver had been fixed in formol, and then treated with alcohol, and afterwards with glycerine and acetate of potash. It is cut into two slices and mounted in glycerine and water for the museum; by this means the appearance of the fresh organ has been fairly preserved, and the large pale masses of malignant tissue, which

in their centres are undergoing caseous degeneration, are very well shown, while around them the much congested liver tissue is seen retaining almost the natural colours. By this process bile-stained parts take on a greener tone than is natural in the fresh tissues.

Portions of the liver were cut by the celloidin method, and stained according to Van Gieson. These show well the columnar-celled type of the cancer, the cells being arranged so that they closely resemble the epithelium of the tubules of the intestine. The granular character of the degenerating tissue is also well seen, and around the tumour masses there has been considerable inflammatory change, which is evidenced by the presence of groups and masses of leucocytes. There has also been much hyperplasia of the connective tissue, especially of the portal areas, so that a rather coarse cirrhosis is present.

In this case the portal vein was not involved in the disease, and both the naked eye and the microscopic appearances are very different from those of the last case (primary malignant disease). In this the disease is most distinctly a columnar-celled cancer secondary to the disease in the sigmoid flexure of the colon.—(Royal Infirmary Pathological Report, No. 1,717.)

Dr. Adamson asked if the pancreas was involved.

Dr. Workman replied in the negative.

3. *A specimen from a case of hypertrophic cirrhosis of the liver.*—Robert S., shipmaster, aged 39, was admitted to the Royal Infirmary on the 11th October, 1897, and supposed to be suffering from malignant disease of the liver.

Summary of Clinical History.—The patient was admitted in a condition of extreme restlessness and semi-unconsciousness, with intense jaundice, œdema of the legs; breathing semi-stertorous, with a peculiar odour of the breath, and the pulse hardish and rapid. The urine drawn off contained bile and albumen, specific gravity, 1012; urea, 1·4 per cent.

He had three fits, tonic and clonic, lasting from two to eight minutes. Temperature, 98·4°. On 13th October there was great hepatic enlargement of peculiar conformation. Projection downwards of the right lobe with depression in an angular direction from the middle line outwards and downwards. Jaundice not so deep as in obstruction. Urine passed in bed. Stools without bile. Bowels acted nineteen times on the 12th October. Pilocarpine and hot baths were given, which were followed by relief temporarily, and even by some degree of

mental coherence. Stated that jaundice had existed for a month, and pointed to a painful part midway between the umbilicus and the xyphoid cartilage and slightly to the right. No primary seat of malignant disease made out, no hiccough, and no vomiting. On the 15th of October the stools were still white. Patient becoming drowsy. The urine practically free from bile. Temperature, 100·6°. A large enema was given (there had been hiccough and vomiting) on the 14th October. The patient died at 11·20 A.M. on the 16th October, 1897. The *post-mortem* examination was made on the morning of the 17th October, 1897.

External Appearances.—A well-developed and well-nourished body, with extreme jaundice of the skin and conjunctivæ. The pupils were contracted and equal. *Post-mortem* rigidity was pronounced. On opening the thorax the pericardium contained between two and three ounces of clear but deeply bile-stained serum. The heart was perfectly healthy in its characters, but the tissues were deeply bile-stained. The lungs were not adherent to the chest wall, and the pleuræ only contained a little bile-stained fluid. The lungs were slightly emphysematous along their anterior borders, but otherwise quite healthy. On opening the abdomen a very moderate ascites was found, not more than 1½ pint of fluid being present in the peritoneum, but this fluid was blood-stained and contained about two ounces of soft blood clot. This hæmorrhage appeared to be due to capillary extravasation, as there was very considerable congestion of the small veins behind the peritoneum and in the root of the mesentery. The stomach showed great passive hyperæmia of its mucous and submucous tissue; it contained a small quantity of fluid which lay in the cardiac end, while the rest of the organ was distended with gas. The mucous membrane of the cardiac end was greatly softened by *post-mortem* digestion. The spleen was enlarged and deeply congested. The pancreas was large and somewhat congested, while the adipose tissue in its neighbourhood, and to some extent also between the acini, showed patches of opaque yellow colour evidently due to fat necrosis. The liver was enormously enlarged and of firm consistence. Its surface and the cut surface, when section was made, had the appearance of yellow granite, this mottled appearance being evidently due to cirrhosis, which was chiefly of the monolobular variety. The surface was much smoother than that of the ordinary "hob-nailed" liver. The right lobe was much more hypertrophied than the left. The gall-bladder was of fair size, and contained a considerable quantity of brownish-yellow fluid bile which

escaped readily, on pressure, into the duodenum by the papilla. The kidneys were large, deeply congested, and much stained by bile pigment; otherwise they appeared healthy. The intestinal mucous membrane was much congested; the jejunum and ileum contained some bile-stained material, but the fæces in the colon, which were very small in amount, were only of a pale yellow colour.

Weights of Organs.—Heart, 11 oz.; right lung, 26 oz.; liver, 153 oz.; spleen, 11 oz.; kidneys together, 20 oz.

Dr. Workman showed slices of the liver, mounted in glycerine and water, which had been fixed in formol, but these did not retain the natural colours, probably because they had been kept too short a time in the formol and the alcohol had acted too strongly. Sections were exhibited under the microscopes which had been stained by Van Gieson's method; these showed well the great hyperplasia of the connective tissue in the portal areas, with very numerous and probably newly formed bile-ducts, in some of which inspissated bile might be seen. There was considerable fatty change in the cells of the lobules, especially in those of the outer zone, and in many parts the portal areas were infiltrated with leucocytes.

The study of the various forms of cirrhosis of the liver is of the greatest interest. The latest paper on the subject is the one by Dr. Herman Heineke in Ziegler's *Beiträge zur Pathologischen Anatomie*, vol. xxii, part 2, 1897. In this paper the author concludes that in addition to the forms of interstitial hepatitis due to obstruction of the ducts by gall-stones, tumours, &c., there is another form in which the great ducts are free, and which arises from a chronic inflammation of the medium sized and small ducts, with destruction of their epithelium, and with excessive growth of connective tissue in their neighbourhood. This form he calls "primary biliary cirrhosis," and he states that it is characterised by hypertrophy of the liver, swelling of the spleen, and comparative absence of ascites; the illness is accompanied by fever.

The case of Robert S. appears to me to have been one of this kind, as the small amount of fluid in the abdomen was very remarkable when considered along with the extreme disease of the liver and the enlargement of the spleen. Though much trust cannot be placed in the absence of a history of alcoholism, the appearance of the liver was so different from those cases in which alcoholism is usually found to be a cause, that I am inclined to believe that this lesion has been produced in a different way.—(Royal Infirmary Pathological Reports, No. 1,733.)

Dr. Middleton said that he was not quite convinced that the case was not alcoholic. He noted that the fluid in the peritoneal cavity was blood-stained, and also that blood-clot was present. He would be interested to find out from *Dr. Workman* in what cases hæmorrhage might occur into the abdominal cavity. He recalled the case of a patient with ascites, who was twice tapped, the fluid in each case being hæmorrhagic. He seemed to be gradually sinking, but was ultimately discharged quite well. The speaker had concluded that there had been some temporary interference with the portal circulation, of such a nature as to be capable of removal.

Dr. Workman replied that in his case the condition of the vessels was due to the obstruction to the portal circulation and the pressure on the vena cava produced by the enlarged liver. Hæmorrhage of this kind, which was caused by diapedesis, was rare in the abdomen.

B. BY DR. DALZIEL.

Dr. Dalziel showed a specimen of congenital cyst of the mesentery removed, together with a portion of intestine, from a child 3 years old.

The patient, D. B., æt. 3, was admitted to the Royal Hospital for Sick Children on 16th November, suffering from intestinal obstruction of six days' duration. *Dr. W. G. Dun* had advised early operation, but the parents refused consent, and only brought the patient to hospital when it seemed *in extremis*.

On admission the patient was pale, with drawn features and cold extremities. The abdomen was distended and tympanitic throughout. No tumour could be detected. Pulse was 126, small, and thready. Immediate laparotomy was performed, and a large cyst of the mesentery exposed, covered, however, by distended coils of intestine.

The cyst, originating in the mesentery close to the bowel, had bulged on either side of it, and embraced a section of the bowel about $2\frac{1}{2}$ inches in length. The tumour had rotated three complete turns, and so twisted the intestine as to lead to complete obstruction. Twenty ounces of fluid rich in cholesterine crystals was withdrawn from the cyst, which, with the included intestine, was removed, a *Murphy's button* being used to unite the divided intestine. The bowels moved a few hours after the operation, and so far the child had made good progress towards recovery, there being no abdominal distension.

The cyst was shown, and also some of the fluid contents.

Dr. Dalziel discussed the etiology of the cyst, which seemed to be rather unusual, in so far as it contained enormous quantities of cholesterine, had firm well-defined fibrous walls lined with endothelium, and had evidently originated in immediate contact with the intestine—about the middle of the jejunum. It did not seem to correspond with any of the usually described cysts—the blood cyst, serous or simple cyst—and the suggestion was advanced that it might be of the nature of a hydrocele, from the inclusion of a peritoneal fold during the development of the intestine.

Dr. Dun said that he had seen the case on the Saturday previous to operation, which took place early on Tuesday morning. He was told there had been no motion since the previous Wednesday. Large enemata were unsuccessful, as only a small quantity entered the bowel. He then passed the fluid in through a large gum-elastic catheter, by which more was introduced, but a large part of it returned stained with fæces. He advised removal to hospital, but the parents objected. The same treatment was carried out on the Monday, and on Tuesday morning the patient was sent into hospital. The abdomen was distended, but not tender, and no tumour could be made out. There was severe intermittent pain, and he had suspected volvulus. He referred to Frænzel's paper on mesenteric cysts, in which it is stated that out of ninety tumours of the mesentery, thirty were cystic. The author emphasises the symptoms of paroxysmal pain and constipation. The cyst may not be accessible to examination by the abdomen until after the constipation is relieved. No such condition is noticed in the paper as occurred in this case. The cholesterine cyst is not mentioned.

Dr. Workman had no personal experience of mesenteric cysts. It was remarkable that there was a peculiar tendency to twisting in all tumours attached to the bowel. He did not know why the twist should always be in the same direction.

Mr. H. E. Clark knew of a specimen in the museum of the Royal Infirmary which had been operated upon for obstruction. The tumour, which was fairly large, was not identified as a cyst until it was dissected out *post-mortem*.

Dr. J. H. Nicoll asked whether the bowel was washed out, and whether sutures were used in addition to the button. Supposing it to be an ordinary serous cyst, he suggested that the cholesterine might be explained by the presence of chyle in the intestine on the one hand, and fat in the mesentery on the other.

Dr. Dalziel replied that the cyst was situated about the middle of the small intestine. He thanked Mr. Clark for his reference, and stated that he had not washed out the obstructed bowel above, but had pushed back the intestinal contents and clamped the bowel above and below. He had had difficulty in uniting the dilated bowel above with the undilated bowel below. He had placed two rows of continuous fine silk sutures outside the button, invaginating the bowel upwards, and pulling its thick hypertrophied portion over the button.

C. BY DR. E. A. GIBSON.

Dr. E. A. Gibson showed a specimen of dermoid cyst of the ovary removed *per vaginam*.

Mrs. M'C., æt. 27. The patient began to menstruate at 16, and was married at 19. She has had three children, the youngest ten months ago. Instruments were used with the first and last delivery. No abortion. Menstruation always regular and normal. No leucorrhœa.

At last confinement she was a long time under CHCl_3 , and the nurse told her that the doctor said there was an "obstruction," and had considerable difficulty in delivering her, having to put on the forceps four times. She asked the doctor during her convalescence about this, but he informed her that she was "all right." Shortly after the birth she began to suffer from severe pain in the back, also from feeling of weight in the pelvis and from "bearing down." These pains at first were intermittent, but have now become constant, and their severity has increased. She consulted Dr. M'Gregor, Ayr, who diagnosed an ovarian tumour, and sent her to me with the view to operation.

I saw her on 9th August, and examined her under CHCl_3 , when her condition was as follows:—Uterus normal in position. There is a freely movable tumour the size of an orange occupying Douglas' pouch; it can be felt to have a short pedicle which passes to the right. On the left side the ovary is felt to be normal in size and position.

On 14th August, assisted by Dr. Edington, Dr. Galt giving CHCl_3 , I operated by vaginal section. Douglas' pouch having been opened, the tumour was seized by a toothed volsellum, and delivered into the vagina. An oily-looking fluid exuded through the opening made by the volsellum, and the tumour being thus reduced in size a ligature was passed round the pedicle with ease. The ligature was tied with a Staffordshire knot and the tumour removed. The left ovary was found to

be normal. The vaginal vault was sutured with catgut sutures, and the vagina loosely packed with CHI₂ gauze.

The tumour on removal was the size of a large orange and perfectly smooth, except that at one end is seen the fimbriated extremity of the Fallopian tube. On opening the tumour it is found to contain a quantity of pultaceous material and light brown hair (the patient's hair is black); the hair is short, and is coiled into a ball. Amongst the hair is a tooth, which is triangular in shape and is devoid of enamel. One of its angles shows the so-called "caries." The inside of the tumour has a quantity of hair growing to it, and at the upper and outer end there is a pseudo-mamma about the size of a garden bean.

The patient made an excellent recovery, and went home on the 7th September.

GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY.

SESSION 1897-98.

MEETING III.—13TH DECEMBER, 1897.

The President, DR. DONALD FRASER, in the Chair.

I.—SPECIMENS.

A. BY PROFESSOR SIR W. T. GAIRDNER.

Professor Sir W. T. Gairdner showed a specimen of chronic aortic endocarditis, associated with a small aneurysm which bulged into the infundibulum of the right ventricle.

Professor Gairdner said that the specimen belonged to a class of case not very uncommon but usually obscure. The aneurysm was of small size, and implicated the heart by engaging the aortic valve. The physical signs were those mainly of the valve disease. There was, however, a well-defined suspicion of aneurysm, embodied in the clinical abstract used for lecture purposes, and stated in advance at the *post-mortem*. This suspicion arose from certain clinical peculiarities of detail:—(a) Anomalies of murmur and sound; (b) suspected abnormal dulness at base, doubtful, however, and even contradicted in a second report; (c) marked tachycardia in excess

of what is to be expected in a lesion of aortic valve. The incompetency of the valve explained the double murmur, but there was this something in the case which vaguely suggested more.

The patient was a man, æt. 26, and the disease, as far as the onset of the existing symptoms were concerned, arose from a strain. Eight weeks before admission, while at work, he strained himself in the back; and this was followed immediately by an uncomfortable beating of the heart. No history of rheumatism or syphilis, no constitutional predisposition, could be ascertained. Tendency to anginous attacks, aggravated by exertion and by alcohol; slight cedema. Tachycardia

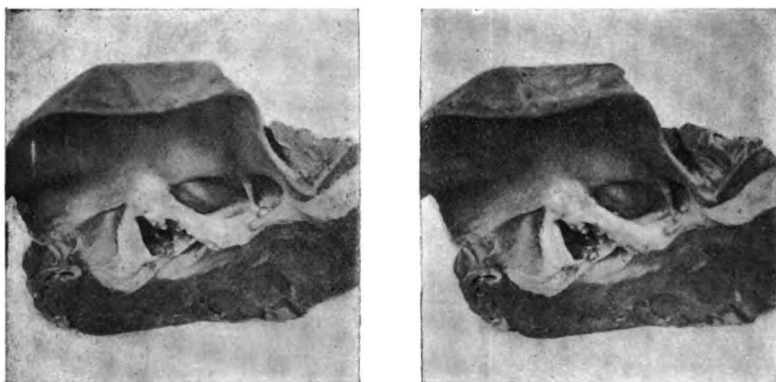


FIG. 1.

most marked; pulse remained hyperdiastolic all through illness, and was thought to be slightly different on the two sides, though not positively so. There was great difficulty in defining the murmurs, these being rather more to the left and lower down than the usual aortic murmur. Urine contained slight amount of albumen. Temperature normal.

Treatment consisted of the administration of cardiac tonics—digitalis, strophanthus, strychnine—with doubtful result. He had also iodide of potassium for five days (which did not agree), and morphia with bismuth and hydrocyanic acid for the relief of pain. Death was sudden.

The following is a summary of the *post-mortem* examination by Dr. L. R. Sutherland:—

Chronic aortic endocarditis, with thickening, shortening,

calcification, and partial destruction of the cusps of the valve, associated with a small aneurysm pointing into the infundibulum of the right ventricle—Cardiac hypertrophy and dilatation—Thrombi in right auricular appendix—Hæmorrhagic infarction of the lung—Passive hyperæmia of spleen, liver, &c.

The heart was greatly enlarged, weighing 630 grammes, or twice its normal weight, the enlargement resulting from hypertrophy and dilatation affecting both sides almost equally.

The mitral orifice admitted five, the tricuspid orifice six

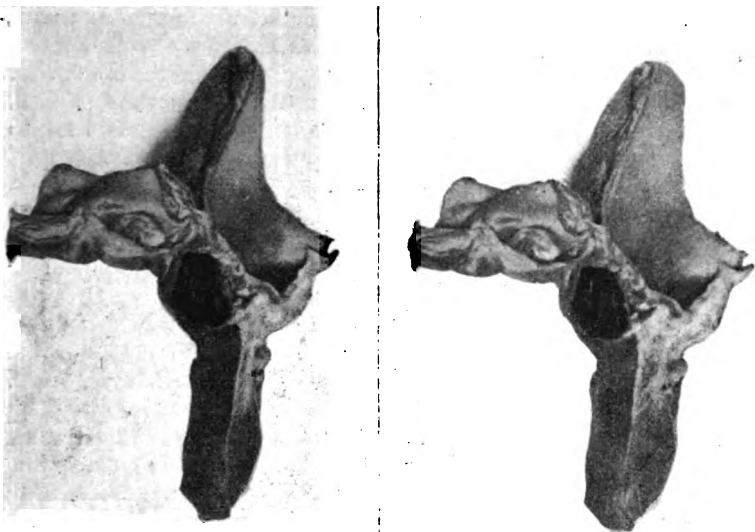


FIG. 2.

fingers readily, and there was corresponding dilatation of the auricular cavities, associated in the case of the right appendix with thrombosis. The aortic valve was incompetent. The cardiac muscle was tolerably firm in consistence and normal in colour.

As shown in the specimen, and in the accompanying stereoscopic photographic reproductions¹ (Fig. 1, p. 196), there is a well-marked lesion of the aortic valve. There is thickening

¹ By examining the illustrations with the aid of a stereoscope, procurable from any optician for a few shillings, the character of the lesion is rendered much more evident.

and shortening of all the cusps, particularly of the two posterior ones. These last are in large part calcified, especially towards their free margins.

About 4 mm. below the junction of the anterior and left posterior cusps, and bounded superiorly by the thickened adjacent portions of these, is a generally triangular aperture, measuring 8 mm. vertically by 5 mm. in maximum transverse extent.

The edges of the aperture are exceedingly firm and resistant, in part smooth and rounded, in part, however, overlaid by calcareous masses which, by their projection beyond the rounded edge, tend to lessen the diameter of the aperture.

This triangular aperture communicates with a well-defined, more or less rounded aneurysmal sac, measuring 2 cm. in greatest vertical extent by 1.5 cm. in other directions (Fig. 2, p. 197). The main projection of the sac is forwards and to the right, into the infundibulum or conus arteriosus of the right ventricle. The ventricular wall is projected in the form of a smooth rounded swelling into the cavity of the ventricle to the extent of 1 cm. The point of maximum projection corresponds with a point 1.3 cm. below the junction of the posterior and right anterior cusps of the pulmonary valve.

Microscopically examined, the wall proper of the aneurysm consists essentially of fibrous tissue, in which considerable collections of granules of brownish-yellow pigment are found. In the immediate vicinity of the neck of the sac involuntary muscular tissue is recognised. There is very marked flattening and thinning of the muscle of the right ventricle at the point of maximum projection.

The aneurysmal protrusion has not apparently interfered with the closure of the pulmonary artery. It may, however, have interfered with the passage of blood through that vessel. The almost entire absence of atheroma in any part of the aorta and in its branches was specially commented on at the *post-mortem* examination. The origin of the aneurysm is probably to be referred mainly to an involvement by the chronic inflammatory process of a portion of the aortic wall near the point of junction of the anterior and left posterior cusps, and a subsequent, probably sudden, giving way of the wall at this point.

B. BY DR. BEATSON.

Dr. Beatson showed specimens from three cases of epithelioma lingualis, two of them associated with leucoplakia, the third with syphilis.

Before giving the clinical history of the cases from which the specimens were taken, Dr. Beatson said that the cases constitute a group bearing on the pedigree of disease (Hutchinson), or the relationship between different pathological processes.

The term leucoplakia has been chosen in preference to others after a consultation with Dr. Sutherland. It implies the well-recognised condition of bluish-white patches on the tongue as well as the warty state sometimes seen, and includes such terms as psoriasis, ichthyosis, tylosis, &c.

On the following points there is general agreement:—

1. Subjective symptoms slight.
2. Three groups of cases:—(a) Red-glazed tongue; (b) white patches; (c) warty condition.
3. Course usually slow.
4. Sometimes cases assume great activity and the white patches become warty.
5. Sooner or later carcinoma is developed.
6. Disease unknown before 20.
7. Disease rarely appears after 60.
8. Disease seldom seen in women.

The exact pathology of the disease is not clearly understood and will in consequence chiefly be considered.

The clinical history of the cases is as follows:—

CASE I.—J. M., 54, married, labourer. Personal history shows good health, with the exception of white-lead poisoning eleven years ago and inflammation of the lungs five years ago. No history of venereal disease. Considers himself a moderate drinker, but admits to being a heavy smoker. White patches on tongue for ten years; could remove them by teeth or finger without bleeding. Two years ago lump appeared on left side of tongue, and attributed to ragged tooth, but removal of the tooth made no difference in lump. First seen in September, 1896, when white patches on tongue with warty growth well-marked. A small patch on inside of left cheek. Chromic acid solution used. Improved and did not return again till May, 1897. Patches unaltered, lump larger, and its surface had a shaggy villous look. Advised interference, but adverse to anything being done. In August he returned, being alarmed at the condition, as the tongue had ulcerated and was very painful. My view was that the ulcer was carcinomatous. A microscopical examination confirmed this opinion, and when informed of the state of matters he consented to operation. On 11th September the tongue was removed by Whitehead's method. He made a good recovery.

CASE II.—D. G., 62, married, mariner. Personal history bad. Has never had syphilis, but for years chest weak, and has had hæmoptysis, bronchitis, and inflammation of the lungs. Digestion always troublesome. Nineteen years ago noticed white patch on tongue like patch of milk. It came and went, but never entirely disappeared; last summer noticed a patch like ringworm on left side near point of tongue. First seen in September, when there was noticed a small ulcer with hard edges on left border of tongue near its point. At its posterior part it approached but did not quite touch a large white patch on dorsal-lateral aspect of tongue. Some enlarged glands felt beneath lower jaw. Advised operation, but patient doubted his inability to go through it. In October he consulted me again, when local conditions were much the same. He was willing now to undergo operation. Before doing so sputum was examined for tubercle bacilli. As not found, the left half of tongue was removed on 27th October by Whitehead's method. He made a good recovery, and consequently on 22nd November the enlarged lymphatic glands were removed from the sub-maxillary triangle, and also some of the deep carotid glands, two of which were closely adherent to the internal jugular vein. From this operation patient also made a good recovery.

CASE III.—J. W., 45, married, blacksmith. His personal history is that of a man who has worked hard and drunk hard. Twenty-two years ago he contracted syphilis. Had usual secondary symptoms. Was under treatment at various hospitals of late years for ulceration of tongue. It improved, but never quite healed, probably, he admits, owing to his intemperate habits. In April last was first seen. At that time on right side of tongue there was a deep ulcer with hard and raised edges and sloughy base. Round it on its left side was a serpiginous tract of ulceration, about half an inch broad, the edges of which were covered with pearly-white epithelium. There were other slight erosions at different points. No enlarged glands felt. Clinically the ulcer was malignant in its characteristics, and as this was confirmed by the microscope removal of the tongue was advised. To this he consented, and on 12th May this was done by Whitehead's method. Patient made a good recovery.

A lantern demonstration was then given of microscopical sections from each case.

In Case I, section of a nodule showed great thickness of epithelium, especially horny layer over warty growth. Absence

of papillæ over leucoplakia. From lowest epithelial cells processes of malignant cells of a squamous type were seen invading the tissues beneath, and along with them a small-celled infiltration. The floor of ulcer showed vascular tissue made up of large malignant epithelial cells, arranged in a loose network and end to end (sarcomatous), and with no cell-nest formation. They passed down deeply with a dense small-celled infiltration in advance.

In Case II, section of a patch of leucoplakia showed epithelium thickened and closely packed. Horny layer well marked. Small-celled infiltration below. Ulcer showed typical squamous-celled epithelium with cell-nests well marked. Fairly dense processes of epithelium dipping down.

In Case III, section of floor of ulcer showed branching processes of squamous cells dipping down, the cells showing a tendency to cell-nest formation. Numerous blood channels among processes of cells, with, in addition, marked proliferation of endothelial cells. Dense small-celled infiltration. Serpiginous area showed similar changes.

With these facts, what then is the pathology or exact nature of leucoplakia?

Its minute anatomy, as illustrated by the above cases, shows:—(a) Obliteration of papillæ; (b) accentuation of horny layer; (c) elongation of the inter-papillary cones of epithelium; (d) dense small-celled infiltration resembling the changes seen in psoriasis of skin. Psoriasis is probably a special chronic inflammation of skin, and facts seem to favour leucoplakia being a chronic glossitis. If so, it bears very materially on Hutchinson's view of cancer, being simply a further stage of a prolonged chronic inflammation, for apparently tongues with leucoplakia sooner or later become carcinomatous.

Mr. Maylard said that it was interesting to note in these cases the length of time that elapsed before a malignant tendency was shown. In one case the patch had existed for ten years, in another for nineteen years, and in the third for nine years. What is the reason for this change? Is leucoplakia in its early state really innocent, or is the change to be regarded simply as the result of chronic inflammation or to infection of a special parasite? A similar change has been observed in old ulcers following burns; in fact, in all carcinomatous conditions there is small-celled filtration of tissues around.

Dr. Rutherford wished to draw attention to one point. *Dr. Beatson* spoke of leucoplakia as meaning a variety of conditions, whereas the term should really be applied to the white

glossy tongue, whether present in patches or otherwise, and should not include the diffuse warty growth. Then, again, it seems like a contradiction in terms to speak of atrophy which accompanies the white glossy tongue as due to chronic inflammation.

Dr. Beatson, in reply, said that leucoplakia in its early state was certainly not malignant, but at a late period of life the tendencies were in favour of its becoming so. He regarded the warty growth as a variety of leucoplakia and resembling it in the fact that it almost invariably became epitheliomatous. *Butlin* regarded it as the precursor of carcinoma. The condition of atrophy mentioned by *Dr. Rutherford* is seen as a result of chronic inflammatory processes elsewhere.

C. BY DR. R. S. THOMSON.

Dr. R. S. Thomson showed a sample of sand passed by a young lady, *æt.* 30. The patient had suffered for many years from symptoms of gastric catarrh, associated with a very decided degree of atonic dilatation of the stomach, and with certain neurotic symptoms.

In the beginning of October, 1896, she began to suffer from one of her periodic gastric attacks, which, in this instance, ran a course of several months, and was associated with marked depression, and at times with almost hysterical symptoms. As the patient objected strongly to having the stomach washed out, she was kept at rest, and fed at short intervals with small quantities of milk and lime-water. With the improvement of the gastric symptoms, the dietary was extended, boiled or steamed fish with slips of toast being allowed. The milk and lime-water, however, constituted her principal food even after these articles had been added to the diet, and in twenty-four hours from 20 to 30 oz. of lime-water was taken in this way. During the illness, the bowels were moved only as a result of the administration of enemata of tepid water at intervals of several days. While the diet was confined to milk and lime-water, the patient's mother had referred with some concern to the presence of sandy matter in the motions. Little attention was paid at first to her statement, but, when a few days later the matter was again mentioned, she was requested to collect some of the sand for examination. Soon after, a sample of the sandy matter, weighing about half an ounce, was collected, and a few days later, a second, which weighed about 6 drs., and was, according to the mother's statement, only about two-thirds of the total amount passed with the

motion. Shortly thereafter, a third sample, about equal in amount to the second, was obtained. The various samples were similar in character. So far as could be ascertained, the passage of the sand was unaccompanied by pain or discomfort of any kind, and there was neither mucus nor blood in the motions. Owing to the lady being a private patient, it was difficult to obtain further samples, but her mother stated that the sand was passed regularly at each stool over a period of some months.

When placed in water, the sand sank with great rapidity, and this afforded a ready means of separating it from extraneous matter. When collected at the bottom of the vessel, it presented a somewhat brownish-yellow appearance, suggesting uric acid, and even when examined microscopically in the moist state the resemblance to uric acid was very striking, but the crystals were irregular in form and varied greatly in depth of colour, some of the particles being opaque and nearly black, while others were more decidedly crystalline and of a pale amber tint. An application of the murexide test, however, gave negative results, and no gas was evolved when the sand was treated with sodic hypobromite. It might be worth noting that one of the samples passed while the patient was on her extended dietary contained a considerable number of fish-bones.

With regard to the source of the sand in this case, there was nothing to suggest a vegetable origin, there being no trace of sclerenchymatous tissue in any of the samples examined microscopically. The source of the sand was probably to be found in the lime-water, of which, as already stated, the patient took a considerable quantity daily. It might be objected that the amount of sand was much greater than could be accounted for by the lime in solution, but it must be remembered that, as already stated, the motions were passed at intervals of several days, so that the sand associated with each motion practically represented the lime taken over that period.

Dr. Alex. R. Ferguson stated that, in conjunction with *Dr. Thomson*, a chemical examination of the samples had been made. The dried sand presented a yellowish-brown colour, closely resembling that seen in the domestic "egg boiler." When treated with strong solution of caustic soda, the great bulk of the sand dissolved, and presented on filtration a solution of deep reddish-brown colour. Treated on a filter with hydrochloric acid or glacial acetic acid, the sand was

decomposed with slight effervescence, and, on washing, a filtrate was obtained having a bright rosy-red tint. Treated in a watch-glass with strong hydrochloric acid, the sand as such disappeared, leaving behind small, soft, flocculent masses of a brownish colour, each apparently representing a grain of the sand. This reaction, when carried out under the microscope, was accompanied by distinct evolution of gas, and the flocculent masses were seen to be composed of what was apparently a brownish pigment.

Several incineration experiments were carried out on the sand with the result that, after complete destruction of the organic matter, a loss of weight amounting to 20 to 27 per cent was noted in the several experiments. The residue was found on analysis to consist of a mixture of phosphate and carbonate of lime, in the proportion of about 20 per cent of the former, and 44 per cent of the latter salt, mixed with over 10 per cent of uncombined calcic oxide. The great bulk of the organic matter consisted of pigment of a brownish colour, apparently in chemical combination with part of the calcium, *i. e.*, with about 11 per cent of the whole inorganic residue. This pigment was characterised by its marked insolubility in most of the ordinary solvents of organic pigments, but its spectrum suggested some relation with the colouring matters of the bile. Further attempts to elucidate the true character and relations of the pigment would be made.

D. BY DR. FERGUSON.

Dr. Ferguson's paper appears as an original article at p. 171.

II.—CARD SPECIMENS.

A. BY PROFESSOR STOCKMAN.

Photographs of a case of hypertrophic pulmonary osteoarthropathy, with skiagraphs of the hands, foot, and knee.—The patient, a man, aged 63, shoemaker, came to me in the spring of 1896, complaining of bronchitis with very abundant spit, and swelling of hands and feet. He had had severe bronchitis almost continuously for forty-five years. The hands began to enlarge about a year previously, and the knees and feet shortly after. He had had no other special illness, and has always been able to work at his trade until quite lately, when his hands became too clumsy for it. No pain in the swollen parts, but a feeling of slight discomfort scarcely amounting to pain. His grip is feeble, and he is very clumsy

with his hands; he walks only with the aid of a stick and very awkwardly.

Treatment.—Iodide of potassium, and expectorants chiefly; no improvement. In June, 1897, practically in same condition. Skiagraphs show enlargement, especially of distal ends of long bones.

B. BY DR. L. R. SUTHERLAND.

1. *A typical epithelioma of the skin.*—The specimen was removed by Dr. Patterson from the outer and upper aspect of the left thigh of a middle aged woman. It was first noticed two years before operation as a small lump below the great trochanter. Its growth latterly had been very rapid.

The specimen and the stereoscopic photographs shown, illustrate very clearly the characteristics of the epitheliomatous ulcer. The microscopical structure is equally typical.

2. *Two specimens of green-stick fracture.*—(a) *Recent green-stick fracture of surgical neck of humerus.*—The accompanying illustration (Fig. 1, p. 206), representing the actual size of the specimen exhibited, shows the upper part of the right humerus. A longitudinal coronal section has been made, passing through the middle of the great trochanter, and the anterior half of the dissected bone is displayed. At the internal aspect of the surgical neck, about 1.5 cm. below the extremity of the epithelial cartilage, is a fracture having a more or less transverse direction, but associated with longitudinal splitting of the bone. The upper fragment overlaps the lower, the latter being driven outwards into cancellated bone. The periosteum has been reflected, and between it and the bone, at the seat of fracture, recent blood-clot in considerable amount is seen. There was atrophy of the entire shaft of the humerus, and at the outer aspect of the surgical neck the bone is distinctly thinned and yields like a quill. Very considerable antero-posterior movement can be elicited.

The specimen was obtained *post-mortem* from a girl aged 10½ years, who died as a result of wide-spread tuberculosis. There was advanced tuberculosis of the cervical, dorsal, and lumbar vertebræ, with involvement of the spinal cord and paralysis. No evidence of tubercle was found in the fractured bone. The fracture, which had evidently resulted very shortly before death, was not recognised during life in the paralysed limb.

(b) *Green-stick fracture of lower end of shaft of femur—Healing.*—A median sagittal section has been made of the right femur, and the right half of the bone is represented, actual size, in the accompanying illustration (Fig. 2, p. 207). At a point above 3 cm. above the lower end of the bone, and 8.5 cm. below the upper limit of the great trochanter, there is a tolerably sharp bend in the shaft, the convexity being directed forwards. At the seat of the bending there is a complete septum dividing the medullary cavity, represented in the illustration as a bridge uniting the convex and concave borders of the fractured bone. The septum is thicker and denser posteriorly, its tissue anteriorly being quite soft and pliable. In the concavity of the shaft the tissues are considerably increased in thickness, particularly so immediately above the septum.

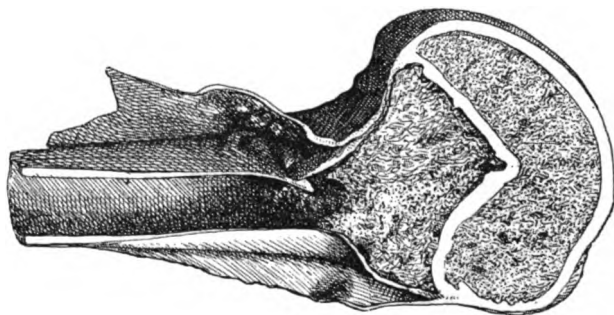


FIG. 1.

Microscopically examined, the septum at its posterior part consists of well-formed bone with tracts of cartilaginous and fibrous tissue. In the last named, numerous brownish-yellow granules of pigment are found. On tracing the septum forwards the areas of cartilage and finally of bone gradually disappear, the anterior attachment of the partition being solely by means of fibrous tissue. In the broad band of tissue immediately above the septum posteriorly fibrous tissue, soft osseous tissue, and cartilage are recognised. The marrow of the shaft is unduly cellular.

The specimen was obtained *post-mortem* from a female infant, aged 1 year and 7 months, who died of general tuberculosis.

The fracture was sustained about eight and a half weeks before death.

3. *A series of specimens of perforating ulcer of the stomach and duodenum.*—The specimens shown, many of which have been recently added to the Pathological Museum of the Western Infirmary, illustrate some of the more important pathological characteristics of the perforating or round ulcer.

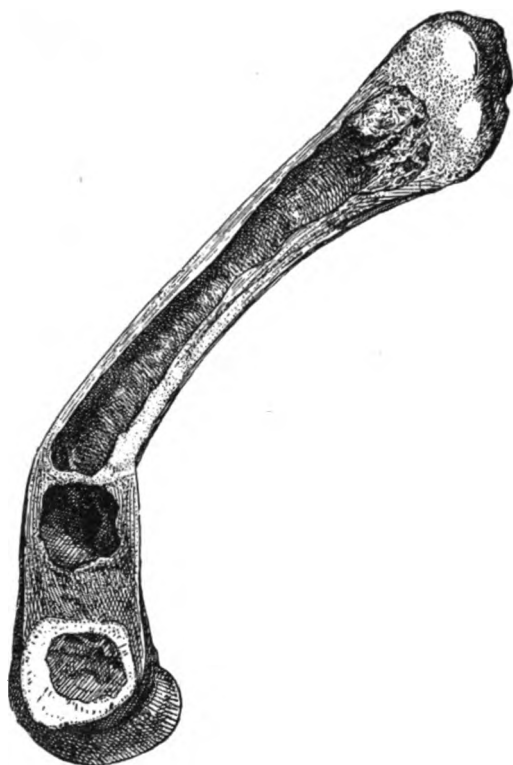


FIG. 2.

CASE 1. *Perforating ulcer of stomach.*—There is a small round ulcer which was situated on the anterior wall close to the lesser curvature. On the peritoneal surface the aperture is clean cut and nearly circular. On the mucous surface there is some irregularity, but the ulcer is very slightly larger than the peritoneal aperture. The abdominal cavity was found to contain about 5 litres of fluid containing flocculi.

M. H., aged 19, a barmaid, was in good health with the exception of indigestion. Suddenly while undressing she took ill, uttering a shriek of pain. Next morning she was found in a state of collapse, with pain and swelling of the abdomen, and she died after an illness of less than twenty-four hours.—(Dr. Crawford, Hamilton.)

CASE 2. *Perforating ulcer of stomach*.—This ulcer was situated on the anterior wall of the stomach, 2.5 cm. from the lesser curvature and about 6 cm. from the cardiac orifice. The ulcer has a general diameter of 2.5 cm. and it is almost as if the whole wall of the stomach to this extent were "punched out," the peritoneal aperture being nearly the same as that of the mucous membrane. The ulcer was somewhat concealed by the left lobe of the liver, and there was considerable exudation gluing the parts in this neighbourhood. The mucous membrane of the stomach generally was thickened and irregular.

Annie M., aged 20, suffered from pain after food with vomiting for a month. She was suddenly about 1 A.M. seized with severe pain. On admission next morning she had a temperature of 102.4° , and complained much of pain and thirst. Next day she had a rigor followed by high temperatures, and she died about forty-eight hours after the first onset.—(Dr. Renton.)

CASE 3. *Perforating ulcers of stomach, one penetrating into peritoneal cavity—Acute peritonitis*.—Before opening the stomach, a small round gap in the anterior wall was revealed, 8 mm. in diameter. The stomach in this region was glued to the liver by recent fibrinous exudation, some of which is still visible in the preparation. There was also extensive general peritonitis, and the abdominal cavity contained over 1100 c.c. of a yellowish-brown opaque fluid having a sour odour. Viewed from within, the ulcer is seen to be about 5 cm. from the lesser curvature, and 3 cm. from the greater. The internal size is very slightly larger than the external. A second ulcer of still smaller size is revealed on the posterior wall, 3 cm. from the lesser curvature. It has a somewhat irregular outline. It is backed by the pancreas, to which it is adherent.

Maggie B., aged 20, housemaid, had complained of pain in the abdomen, lasting for some time. It was almost constant for six weeks, but was aggravated by food.—(Professors Gairdner and Macewen.)

CASE 4. Double perforating ulcer of stomach—Peritonitis.—The specimen shows two perforating ulcers, situated almost directly opposite each other, one on the anterior, the other on the posterior wall of the stomach. Both have the typical characters of the perforating ulcer, the floor being formed by a thin membrane in which perforation has occurred. The anterior ulcer, which was situated 9.5 cm. from the pylorus, and 2.5 from the lesser curvature, is ovoid in form, with its long axis vertical. On its mucous aspect it measures 1.7 cm. in greatest diameter; on its serous aspect it measures only 5 mm., the edges of the apex of the cone being necrosed. The posterior ulcer, situated opposite the anterior, is circular in outline, measuring on its mucous surface, 1.5 cm., and on its serous, 1 cm. The stomach was in great part concealed by liver, the left lobe of which was unduly elongated and thinned. On reflecting the lobe, brownish fluid was seen escaping from the anterior perforation. The peritoneum around the aperture was covered with recent fibrine; there was acute general peritonitis with exudation in the lesser sac.

Agnes M., aged 17, was suddenly seized one evening with intense pain in the abdomen, followed by stercoraceous vomiting. During the afternoon of the same day she had been engaged carrying large quantities of coal. She was admitted to hospital two days later, almost pulseless. The abdomen was distended, tympanitic, and there was great pain on palpation, especially in the iliac regions. Abdominal section was performed, and the abdominal cavity, which was free of sero-purulent fluid, was irrigated. The patient died the following morning, eighteen hours after admission, and about three days after the outset of her symptoms.—(Professor Macewen.)

CASE 5. Perforating ulcer of stomach rupturing into and causing suppurative inflammation of the lesser omentum—Healed ulcers of stomach.—The ulcer displayed, which measures 3.5 cm. by 2.5 cm., was situated on the posterior wall of the stomach, its upper edge being about 4 cm. from the lesser curvature, and rather nearer the cardiac than the pyloric orifice. It has the usual features of the perforating ulcer, and its floor is mainly formed of pancreatic tissue. A perforation has occurred at the lower part of the ulcer, just beyond the lower edge of the pancreas. This perforation led into the cavity of the lesser omentum, which is partly displayed in the specimen. It contained a considerable quantity of creamy pus. There had also been a slight leakage into the general

abdominal cavity, with consequent general slight peritonitis. The stomach presented several other ulcers, most of them healed or partly so. Some of them are displayed in the part hung separately. There are many small ulcers, and there is one of large size, measuring 4 cm. by 2·5 cm. It presents only a slight flat depression, but with well demarcated but still rounded margins. There is no puckering around. This ulcer was situated on the anterior wall, with its edge slightly removed from the lesser curvature.

Elizabeth C., aged 17. The case was interesting, as the symptoms pointed to an obscure abdominal suppuration. Ten days before death, she was suddenly seized with violent abdominal symptoms, great pain and distension, with collapse temperatures. She improved slightly, and then became worse and died. She had suffered for about four years from dyspeptic symptoms, especially pain after food.—(Professor George Buchanan.)

CASE 6. *Perforating ulcers of stomach (three) exposing pancreas, and penetrating peritoneum and gall-bladder.*—The portion of stomach preserved is the lesser curvature and neighbouring parts. Near the pyloric orifice there is a large ulcer, 7 cm. in its long diameter, which is transverse to the lesser curvature, and 4·5 cm. in the other diameter. Its floor is mainly composed of pancreatic tissue, the ulcer extending more along the posterior than the anterior wall of the stomach. The truncated pancreas is shown in the preparation projecting below the stomach wall. At the upper extremity of the ulcer it has penetrated the anterior wall by a cleft-like aperture, and acute peritonitis was the cause of death. Close to the upper edge of the ulcer, but nearer the pylorus, is a small round aperture, communicating directly with the fundus of the gall-bladder, which is firmly adherent. There were firm elongated adhesions between the left lobe of the liver and lesser curvature. Besides these two ulcers, there is a small typical round one, 1·3 cm. in diameter, between the large ulcer and the cardiac orifice and in the line of the lesser curvature. The ulceration seems to have been more extensive than the present condition shows, as cicatrices existed round the large ulcer.

Andrew M'V., aged 45, was affected with stomach symptoms many years, and about four years before death had a severe attack of vomiting and pain. The vomited matter was black. He had a sudden attack of violent pain over the entire abdomen, and died within twenty-four hours.—(Dr. Tennent.)

CASE 7. *Perforating ulcers of stomach and duodenum—Adhesion to gall-bladder and exposure of pancreatic tissue.*—There are two ulcers shown in the preparation. A large one, measuring 4.5 cm., with its long diameter across the lesser curvature, and with its edge about 3 cm. from the pylorus. The ulcer is deeply excavated, and its floor presents warty-looking projections, due apparently to fat lobules exposed in its floor. The other ulcer is immediately beyond the pylorus. It is nearly circular in form, and 2 cm. in diameter. It is deeply excavated, and in its floor is pancreatic tissue. The subjacent parts of stomach and duodenum are firmly adherent to the neck of the gall-bladder. There was great dilatation of the stomach, whose greater curvature reached below the umbilicus, into the left lumbar region. The pylorus was fixed by the adhesion already mentioned. The duodenal ulcer was filled with blood, and blood was contained in the intestine, chiefly in the large intestine, and extending to the descending colon.

John L., aged 50, had dyspeptic symptoms for seven years. For the last two years vomiting was a prominent symptom. Sometimes a week or even a month would elapse without vomiting, and then large quantities would be ejected. Localised pain was experienced an inch and a half below the xyphoid. The pain was much increased on pressure and by taking food, generally coming on five minutes afterwards.—(Dr. Finlayson.)

CASE 8. *Perforating ulcers of stomach and duodenum (six) exposing liver and pancreas.*—The principal ulcer here is a large one, which lies across the greater curvature, its diameter in this direction being 7.5 cm., whilst its other diameter is 3.5 cm. It lies almost equally on the posterior and anterior walls. On the posterior wall the stomach is adherent to the pancreas, and for the greater part of its extent the ulcer exposes pancreatic tissue. On the anterior wall there is a certain amount of stomach wall remaining, but a gap exists, 3.2 cm. in diameter, which was backed by liver whose tissue is exposed and somewhat eroded. Besides this ulcer, there is a small one, about 6 mm. in diameter, close to the pylorus. In the duodenum there are four ulcers of typical characters; one whose edge is at the pylorus, and partially undermines it, is triangular in shape, and 2 cm. in diameter. 6 mm. beyond the apex of this ulcer there is a somewhat quadrilateral one, 2.5 cm. in diameter, whose floor is chiefly composed of condensed pancreatic tissue. Immediately beyond the edge of this one there is a smaller one, 6 mm. in diameter. Anteriorly in the same region there is a larger one, 2 cm. in diameter.

Fanny P. died from acute pneumonia. No disease of the stomach was known to exist.—(Dr. Tennent.)

CASE 9. *Perforating ulcer of duodenum*.—The ulcer is situated immediately beyond the pylorus. It is circular in shape, and measures in general about 7 mm., the mucous surface being slightly larger. There was great exudation in the peritoneum in the neighbourhood of the bladder (gall), and the ulcer was somewhat concealed by it.

James F., aged 54, was admitted with symptoms of acute intestinal obstruction. There was a history of heavy drinking and dancing two days before admission; then sudden sharp pain in the epigastric region, extending over the abdomen. Abdominal section was performed, and volvulus of the small intestine was found and rectified. The patient died about twelve hours after the operation, or about twenty-four hours from the seizure.—(Professor Macewen.)

CASE 10. *Perforating ulcer of anterior wall and duodenum*.—The ulcer measures 1·5 cm. The peritoneal aperture is nearly continuous with the mucous. The ulcer is situated within 1 cm. of the pylorus. At the *post-mortem* examination, on raising the right lobe of the liver, the round sharply demarcated aperture was revealed. There was considerable fibrinous exudation, some of which still adheres to the peritoneal surface.

Archibald B., aged 30, felt a sudden pain in the abdomen, located about the umbilicus, six days before death. This was followed by vomiting, which continued till admission, four days after. The abdomen was distended and tympanitic, and there was redness and pitting on pressure in the right iliac region. Abdominal section was performed, and a large quantity of foetid pus removed from the abdomen.—(Drs. Gemmell and Cameron.)

CASE 11. *Perforating ulcer of duodenum*.—This ulcer is situated about 2·5 cm. beyond the pylorus, it is rounded in shape, and 1·5 cm. in diameter. It has eaten through the entire coats of the intestine, its base being now formed of connective tissue. No open-mouthed vessel is discovered in the floor, but immediately behind it there is a comparatively large artery.

The case was mainly one of aortic valvular disease from chronic endocarditis with calcareous deposition. There was a small amount of blood in the stomach and small intestine.

but no hæmatemesis or other indication of this lesion was noted during life.—(Dr. Finlayson.)

CASE 12. *Perforating ulcer of duodenum, opening into artery—Fatal hæmorrhage.*—The specimen, as shown in accompanying illustration, shows a deep excavated ulcer, of a quadrilateral shape, situated just beyond the pylorus and partly involving its border. It measures 2.5 cm. in the direction of the axis of the gut, and 2 cm. across. The edges of the ulcer are absolutely abrupt, and its floor is formed partly of cicatricial tissue, but also of pancreatic tissue. In the floor an



artery is exposed, the superficial portion of its wall being completely dissolved away, so as to leave only a shallow gutter, for a distance of about 2 cm. A piece of whalebone is passed from the artery above, through the floor of the ulcer, into the other aperture, and out of the artery below. The artery is made out as the gastro-epiploica. There was a large quantity of altered blood in the large intestine, and a smaller amount in the small intestine.

A. C., aged 27, a clerk, was subject for two years to occasional attacks of sickness, pain, and vomiting, usually two a year. The fatal attack lasted about six months. There was general tenderness, but no limited pain. On 16th July, there

was an attack of syncope, followed by great prostration, and a similar attack next day. After this, altered blood was passed by the bowel, and a state of anæmia followed, with V.S. murmur, &c. He improved greatly, and the cardiac murmur disappeared. About the beginning of September he got worse, pain and vomiting being more considerable. On 19th September, collapse, pallor, &c., with return of V.S. murmur. This continued, and he gradually sank, and died on 25th September.—(Dr. Joseph Coats.)

CASE 13. *Perforating ulcer of duodenum opening into artery—Fatal hæmorrhage.*—This preparation is very like the preceding, an artery being exposed and open in the floor of the ulcer. At the *post-mortem* there was great matting of the parts and contraction of the pylorus (the ulcer touching the pylorus), so that at first it was taken for a cancer of the pylorus. The stomach was much dilated, and its muscular coat hypertrophied.

William C., aged 36. Illness began three years ago with indigestion. This recurred at intervals, and was accompanied with pain and vomiting. On admission, there were evidences of dilatation of the stomach. About two months before death vomiting of blood began, and recurred at intervals till death, the patient gradually becoming weaker.—(Professor Gairdner.)

CASE 14. *Perforating ulcer of duodenum penetrating liver.*—Equal portions of stomach and duodenum are preserved, the pyloric ring being indicated by a transverse ridge. A somewhat quadrilateral ulcer is present in the duodenum, involving the pyloric ring. In its full diameter of 15 mm. it involves the whole thickness of the wall, and penetrates to a depth of fully half a centimetre. But beyond this, and occupying a smaller area, there is a deeper penetration exposing liver tissue which was readily recognised in the fresh state by its brown colour. The part of the liver involved is the under surface of the left lobe near the anterior border, and immediately adjoining the suspensory ligament.

John G., aged 46, had been for five years affected with dyspeptic symptoms, and for two years had discomfort and swelling of the stomach after food. The pain came on five to seven minutes after food, and lasted ten to fifteen minutes. Patient was also affected with tuberculosis of the vertebræ, lungs, spleen, kidney, testicle, &c.—(Dr. Gemmell.)

CASE 15. Perforating ulcer of duodenum—Penetration of liver—Multiple hepatic abscesses—Suppuration in mesenteric glands.—The specimen consists of a portion of the liver, including gall-bladder, adherent to which are portions of the pyloric end of the stomach and duodenum. At the upper and posterior part of the duodenum, immediately abutting on the pyloric ring, and, indeed, to some extent overhung by this, is a circular ulcer, 1·2 cm. in diameter, having the characters of a perforating ulcer. Through the perforation a probe may be passed into the liver in several directions into abscess cavities filled with peculiarly tenacious muco-purulent matter. Abscesses were present throughout the entire hepatic substance, and projected from the surface of the enlarged liver at various points. As seen in the portion preserved, they are fairly clearly demarcated, the walls showing a slaty-green discoloration, and they vary in size from a pea to a hen's egg or larger. The glands in the mesentery and in the neighbourhood of the head of the pancreas were greatly enlarged, soft, and fluctuant, and contained purulent material.

David C., aged 36, for ten months before death suffered from recurring attacks of acute pain, lasting for two or three days, and localised to a spot 2 inches to the right of the umbilicus.—(Dr. Patterson.)

OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

SESSION 1897-98.

MEETING II.—24TH NOVEMBER, 1897.

The President, DR. MALCOLM BLACK, in the Chair.

I.—SPECIMENS.

A. BY DR. LINDSAY.

Dissection of a Case of Mistaken Sex.—About five years ago I brought to your notice the occurrence of "Three Cases of Doubtful Sex in One Family."¹ I may recall to your memory that one of the children had been brought up as a boy, and the two younger ones as girls. At that time I

¹ *Glasgow Medical Journal*, March, 1893.

expressed the opinion, with which most of you agreed, that all three were really males. The child, "Lizzie," whom I showed on that occasion, died last June from phthisis, and I obtained permission to make a *post-mortem* examination. I now show you the dissected genital organs. The dissection shows that the subject was a true male without any approach to the female conformation except hypospadias and the absence of the testicles from the scrotum. The vasa deferentia and vesiculæ seminales have been fairly injected with mercury, and are easily seen on the posterior wall of the bladder. The prostate is also apparently normal. Had there been any approximation of the internal parts to the female type, one would have expected to find it in connection with the sinus pularis, the analogue in the male of the uterus in the female. But the sinus is not perceptibly enlarged. Two glandular bodies were found in the inguinal canals, and the section under the microscope shows that these had the usual structure of testicles.

B. BY DR. J. NIGEL STARK.

Anencephalic Fœtus.—The fœtus was a perfect specimen of an anencephalous monster, the entire brain and vault of the cranium being absent, the face looking directly upwards and the ears touching the shoulders. There was also spina bifida down to the upper lumbar vertebræ, and the bladder was extroverted. The patient was 32 years of age, a secundipara, and was seven months pregnant. The presentation was cranial.

II.—ANTE-PARTUM HÆMORRHAGE, WITH AN ANALYSIS OF FIFTY-ONE CASES OF PLACENTA PRÆVIA.

BY DR. JARDINE.

Dr. Jardine's paper appeared in our issue for January, 1898, at p. 11.

Dr. Samuel Sloan was surprised to hear of four cases of serious accidental hæmorrhage in one year. He would be astonished to learn that he had had four in all the eight years in which he held office in the Maternity Hospital. He referred to the high percentage of stillbirths, and wondered if there were many cases of retention of the head. He thought that if the placenta were marginal and the head low down the forceps might be better. It was often the best thing to strip

off the placenta with the finger. He had seen it act so promptly, sweeping the finger round as far as it could reach. Dr. Jardine had not mentioned counter-pressure of the abdomen by a firm bandage. Dr. Jardine seemed to object to letting out the liquor amnii, as this simply allowed the blood to get in. Rupture of the membranes rather permitted retraction of the uterus, and this was often sufficient. Traction had been referred to as causing tearing of Champetier de Ribes' bag, but why use traction? Placenta prævia did not necessarily mean a misplaced placenta. There might be a large placenta and a small uterus. Partial separation in such cases was not harmful.

Dr. Balfour Marshall said it would simplify matters if central placenta prævia were kept in view in the discussion. Such placentæ were generally thin, and he would bore the hand through and bring down a foot. The after-coming head should not be delivered too speedily, the cervix in such cases being so very much softened, and the vascularity enormous. Stripping off a central placenta prævia with the finger was to be condemned. It was different with marginal or lateral placentæ. As regards bursting of the bags, four had burst in his hands. Another objection to them was the difficulty of asepsis. He had doubts regarding endometritis as a cause of placenta prævia. The theory of the persistence of the villi was difficult to prove. Plugging was useful in many cases, especially when the cervix was not dilated. The hæmorrhage was bound to be arrested as the cervix was forced against the placenta. He would leave the plug in for six hours, and renew it if necessary. Some of the cases of accidental hæmorrhage must have been due to placenta prævia. Their histories read like that. No amount of fluid could separate a normally implanted placenta. He had only had one case of concealed hæmorrhage, and accouchement force was tried.

Dr. J. Nigel Stark wished to emphasise one point—that some of these cases of accidental hæmorrhage were really cases of placenta prævia. He remembered such a case, where a patient slipped on the street and alarming hæmorrhage occurred. The placenta was marginal, and he ruptured the membranes and then did an internal version. There was often a history of some such accident as a stumble. He missed any reference to palliative treatment. If bleeding stopped, and the child was viable, there was no harm in palliative treatment—rest in the horizontal position and careful watching.

Dr. John Edgar referred to the mortality of the child as

being very great, though of course this was a secondary point. Laceration of the placenta by stripping or otherwise was to be avoided, as it involved the life of the child and there was greater risk of sepsis. If a third of the placenta were separated the child would almost of a necessity die. The treatment he advocated was the introduction of de Ribes' bag and allowing labour to go on, not pulling unless hæmorrhage persisted. The danger of *post-partum* hæmorrhage was great. He had lost two such cases, one of them by laceration of the cervix and lower part of the body. For such an emergency he would try tamponade of the cervix and vagina. The fornices might be opened and the uterine artery secured. Dührssen had removed the uterus in one case. The other case he had lost had *post-partum* hæmorrhage after placenta prævia. Such cases should not be left for several hours. He agreed with Dr. Jardine as to accidental hæmorrhage and his strictures on the practice that obtained at the Rotunda Hospital. He recommended bipolar version if the os was not dilated, and then rupture of the membranes.

Dr. Mulcolm Black said that in accidental hæmorrhage he usually found rupture of the membranes sufficient. In other cases he had turned, and waited as in placenta prævia. In cases of placenta prævia before dilatation of the os and rupture of the membranes he practised bipolar turning. Forcible dilatation was very dangerous. Bipolar turning meant the probable loss of the child, but the life of the child was not very hopeful at the best. The safety of the mother was most important. A serious concealed hæmorrhage must be very rare. He remembered a very striking case in which the first indication was the death of the patient. At the *post-mortem* examination a clot was found in the position of the placenta, which was completely separated. He agreed with Dr. Sloan as to the stripping of the placenta as far as the finger could reach with the hand in the vagina. He had frequently practised this, and had got living children. Sepsis was, of course, more likely in such cases.

Dr. Jardine, in reply, said that he could not agree with the criticism that some of the cases of accidental hæmorrhage were really cases of placenta prævia. In Case I he had mentioned that the history pointed to placenta prævia, but no placenta could be reached, and no hæmorrhage occurred while the os was dilating; and, moreover, when the placenta was expelled there was a black clot behind a considerable portion of it. In Case II there was no doubt, as the placenta and membranes were completely separated by a very large quantity of clot

distending the uterus. Case III he had not examined, but his resident, Dr. Webster, was present, and he could tell them if he felt the placenta when he passed his hand in to turn. (Dr. Webster said he had not). Case IV was the only one he was in doubt about. The placenta was low down certainly, but he doubted if it was within the prævia area, because it must be remembered that labour had been going on slowly for nearly three days, and during that time the cervix had dilated and thinned out considerably, and yet not one drop of blood had been lost. Dr. Sloan had said that he was surprised at the large number of cases of accidental hæmorrhage, and that he did not think he had seen as many all the years he had been on the Maternity staff. Dr. Jardine said he had had two others, making six, and he would like to say that these cases had not been seen by him alone, but other members of the staff had concurred with him in the diagnosis. In fact, of all the cases reported, every one had been seen by other men except the first case of placenta prævia.

Regarding the criticism of his objecting to the rupturing of the membranes in accidental hæmorrhage, he wished to point out that it was in the concealed variety he objected to this, and not in the external. He still maintained that if the uterus was over-distended and paralysed, rupturing the membranes would only make more room for blood to be poured out.

He had not mentioned prophylactic treatment in placenta prævia, although in the report of one of the cases (the case of twins) this had been adopted. If the patient could be kept perfectly quiet, and the first hæmorrhage was not a severe one, he thought it was as well to wait, and allow development of the child to go on as far as possible.

He thanked the Society for the way his paper had been received, and was glad it had brought out so many differences of opinions.

REVIEWS.

The Analysis of Food and Drugs. Part I: Milk and Milk Products. By T. H. PEARMAIN and C. G. MOOR, M.A. Cantab. London: Baillière, Tindall & Cox. 1897.

THIS is the first part of a manual which, dealing with the principal articles of food and drink, is intended by the authors

to be convenient for laboratory use by analysts. It does not pretend to deal exhaustively with the many processes of analysis which are applicable to different substances, but it gives the best working processes whereby adulteration and sophistication may be detected. This part deals with the important articles of diet—milk, cream, condensed milk, butter, and cheese. The chapter on milk contains condensed information regarding the milks of animals and of the human being, showing wherein the milk of the cow especially may be affected by its feeding and environment.

Respecting abnormal milks, viz., those deficient in fat, the authors very properly consign them to the category of sophisticated milks, since they are not of the nature and quality of the average healthy product of the cow. Milk standards attract the attention of the authors; the standards of various countries are tabulated, and they arrive at the conclusion that, by reason of the low standard for fatty solids in this country, the milk of the general dealer is reduced in quality conform to the standard. The standard of Somerset House, viz., 2.75 per cent for fatty solids, is lower than that of other countries, and we entirely agree with the suggestion made, that it should be raised to 3 per cent—the standard of the Society of Public Analysts.

In the estimation of the fat of milks, the authors describe various well-known processes, and devote some attention to the more rapid centrifugal methods of Leffmann-Beam, by which an estimation may be made in a few minutes. We observe that in the estimation of milk-sugar, it seems of little importance to the authors that a clear filtrate be obtained for operating upon, either by the Pavy-Fehling or the polariscopic method. We have experimented with all the methods, and have concluded that it is best to operate upon a clear filtrate obtained by Radliscu's method—by milk of alumina and dilute acetic acid.

The use of preservatives in milk, a very common fact to-day, occupies several pages. Such as boric acid, borax, salicylic acid, are by no means uncommonly used; but the prevalent substance used at present is formalin, a 40 per cent solution of formaldehyde. All of them are intended to delay the action of the lactic acid bacillus. Sophistication of milk is now reduced to a science, and analysts have to keep themselves on the alert. The authors give the latest and best tests for the detection of formalin. Very properly, too, the bacteriology of milk is brought before the reader, and the means of detection of pathogenic micro-organisms are pointed out and described.

The chapter on condensed milk is very well treated. The authors point out that not a few brands are nothing more than skimmed or "separated" milk. The importance of the knowledge of this sophistication will at once be seen in the bottle-feeding of infants, for where economy is a necessity a mother is apt to purchase the cheaper brands, under the impression that they are composed of *bonu fide* milks, and not observing the words in very small type on the labels, "condensed skimmed milk," may wonder why her infant does not thrive. The authors are of opinion that, immediately succeeding the foregoing words the law should demand that the following words be added, viz., "Skimmed milk is unfit for the nourishment of children." We should like to add the suggestion that the words ought to be printed in larger type than the rest of the label, following the precedent of the Margarine Act.

The chapter on butter and margarine is very well written, and the means of detection are duly pointed out. The authors advocate the ordinary Reichert process for the estimation of the volatile fatty acids, but this has been shown by Meissl to be inaccurate owing to the absorption of CO_2 during the process. We have found the Reichert-Meissl-Wollny modification superior in accuracy, as the whole operation of saponification is conducted in closed vessels.

The foregoing will serve to indicate that the book is a reliable guide, and we close it with a hearty commendation to all who desire a trustworthy and compendious manual on the analysis of milk and milk products.

Gray's Anatomy: Descriptive and Surgical. Fourteenth Edition. Edited by T. PICKERING PICK. London: Longmans, Green & Co. 1897.

THE appearance of a new edition of a work which has passed through fourteen editions within the space of forty years is welcomed as an old and familiar friend. Outwardly, the present issue of *Gray's Anatomy* does not differ materially from the last two or three of its predecessors. The work has been enlarged by the addition of seventy pages to the text; the illustrations number seven hundred and five, as against six hundred and thirty-six in the thirteenth edition.

According to the preface, the whole work has been subjected to careful revision, some sections having been almost entirely rewritten; old illustrations have been removed, in some

instances to be replaced by others, while many totally new illustrations have been added to the book.

The sections on Histology and Embryology, concise and containing nothing superfluous, remain very much as in the last edition, although it may be noted that in the account of the blood the corpuscles are classed as erythroblasts, chromocytes, and leucocytes.

The section on Osteology, very full and discursive, numbers about two hundred pages. Here we have to point out several inaccuracies, which we hope to see rectified in a future edition. In the diagram pertaining to it, the first rib is described as being the shortest, although in the text it is described as being *one* of the shortest; as a matter of fact, the twelfth rib is, in a large percentage of cases, the shortest. Certain of the muscular attachments, as shown by the diagrams, are not quite correct, *e.g.*, the attachment of the pronator quadratus to the radius, the pectineus and obturator internus to the innominate bone, the crureus to the femur, and the erector spinæ to the sacrum. It is mathematically wrong to describe the body of the sphenoid bone as being cuboidal in shape, and as presenting four surfaces only, as the author does; it would be better to describe six surfaces. Separate diagrams of the individual carpal, metacarpal, tarsal, and metatarsal bones have been incorporated in the present edition; these will prove of great benefit to students. The account of the joints, muscles, and blood-vessels is quite up to the present standard. As usual, the description of the blood-vessels is particularly good; several new useful diagrams are noted.

The section on Neurology remains up to date, as far as the peripheral nerves are concerned. We expected that much greater changes would have been effected in the description of the central nervous system. The cerebrum is still described as consisting of five lobes, and there is no mention of the limbic lobe.

In the description of the viscera, the liver is regarded as presenting three surfaces. As two of the diagrams are drawn from the models of Professor His, we believe that the text would have been more in accord with the diagrams had five surfaces been described, as is now usually done.

A new account of the peritoneum from a developmental aspect, by Dr. Brockway, of New York, which has already appeared in the American edition, has been included in this edition. It is short, clear, and is accompanied by numerous diagrams.

Gray's Anatomy is one of the most serviceable text-books of anatomy for a student. We heartily wish this edition the support which has been accorded to its predecessors by many generations of students.

John Hunter: Man of Science and Surgeon (1728-1793).

By STEPHEN PAGET, with an Introduction by SIR JAMES PAGET. "Masters of Medicine" Series. London: T. Fisher Unwin. 1897.

THIS work is the first of a series of biographies which is sure to be popular with the medical profession; and we are grateful to the publisher, Mr. Fisher Unwin, not only for taking up the idea, but also for the artistic merits of the volumes already published of this interesting series. As examples of the publisher's art, the volumes are all that could be wished. One cannot help deploring the removal by death of the cultured editor of the series, Mr. Ernest Hart, at the very beginning of his task.

We in Glasgow are now tolerably well acquainted with the main incidents of the lives of the brothers Hunter, mainly through the labours of our late townsman, Dr. George R. Mather. His delightful biography of the two great Scotsmen is mentioned with appreciation by Mr. Paget; and we are hopeful that at no distant date an artistic memorial of them, worthy of their genius and work, may be raised in our city.

We have nothing but praise to bestow upon the manner in which Mr. Paget has written his interesting life of John Hunter. The book will be enjoyed by the layman as much as by the man of science, and is thus fitted to make known to a wider circle of readers the interesting events of an intensely interesting and industrious life. It cannot be said that there is much that is new in the volume, with the exception of some of the letters in Miss Baillie's collection, and these deal chiefly with the family and social history of the great surgeon. Dr. Finlayson's interesting description of, and quotations from, Mr. William Clift's account book, throwing, as it does, a flood of light upon Hunter's household, has been included for the first time, we should think, in a biographical work. The chapter on St. George's Hospital is of great interest, especially when read in connection with the professional experience we have recently passed through in connection with one of our Glasgow hospitals.

Mr. Paget's book is in all respects worthy of the great man it commemorates, and will well repay a careful perusal.

Outlines of the Diseases of Women. By JOHN PHILLIPS, M.A., M.D., F.R.C.P. Second Edition. London: Charles Griffin & Co., Limited. 1897.

AFTER an interval of nearly four years this useful compendium has reached a second edition. The preface informs us that little alteration has been made in the text as a whole, but that separate notices have now been added of "Kraurosis," "Deciduoma Malignum," "Movable Kidney," "Sterility," "Normal Secretions from the Genital Organs," and "Leucorrhœa." Dr. Phillips has little to say of kraurosis, and makes no reference to the treatment of movable kidney. The separate notice on leucorrhœa is inserted at p. 143 after the description of superinvolution of the uterus, although the subject is already referred to in some detail at pp. 53 and 110. The notes on deciduoma and the normal secretions of the genital tract are more satisfactory. In his note on sterility he mentions "marriage either before the age of 23 or after that of 38 years as a cause of sterility" (!). The proofs have not been very carefully read, *e.g.*, *bulbus vestibulus* (p. 5); *this fringe of processes surround* (p. 11); line 22, p. 55, printed twice; *neither of these plans succeed* (p. 63), &c.; and again in the appendix, anterior bulging being noticed during extraction (contraction?) (p. 262). Exception might also be taken to such expressions as—"Over a majority of its surface" (p. 12); "anteponation" and "retroponation" (p. 24); "primitive" (for primary) (p. 61); "exsect" (p. 104); "extroversion" (for erosion) (p. 135).

Apart from these criticisms, the book deserves to be recommended as a well compiled summary of present day gynæcology in small bulk and of moderate price. The outline drawings, which abundantly illustrate the text, deserve a special word of praise.

The Cæcal Folds and Fossæ. By RICHARD J. A. BERRY, M.D., F.R.C.S., F.R.S. Edin. Edinburgh: William F. Clay. 1897.

THE object of the publication of this small but important work is an attempt to solve and simplify the various descriptions of the cæcal folds and fossæ, and therefore, indirectly, the relations of the vermiform appendix. Much has been written of late on the anatomy and surgical anatomy of this region, and much confusion has arisen on account of the varied nomenclature, no two authors entirely agreeing as to

the most suitable name for the particular fold or fossa in question.

That the author has simplified the descriptions of these fossæ there can be no doubt. The anatomy of the peri-cæcal folds and fossæ is first considered, and preference is given to the terms ileo-colic, meso-appendix, and ileo-cæcal folds, as bounding the ileo-colic and ileo-cæcal fossæ respectively.

The author differs from Jonnesco and other writers in regard to the length of the meso-appendix. After careful examination of one hundred cases, he found that in every instance the mesentery completely invested the appendix.

The more important retro-cæcal region is then described, and the description is simplified by changing the nomenclature (the term retro-colic is given), and by adopting Jonnesco's division of the fossa into two, external and internal—the external lying between the outer and inner layers of the ascending meso-colon, and the internal between the inner layer of the ascending meso-colon and the posterior attachment of the enteric mesentery.

In the section describing the topographical anatomy of the appendix nothing new is furnished.

The author is inclined to the belief that the complete descent of the cæcum is not accomplished as soon as has been hitherto supposed, a belief at variance with a statement made by the late Dr. Allen Thomson, that the parts are in the same position as in the adult at the fourth or fifth month of foetal life.

The illustrations are from photographs, and form an important feature of the work. Some of them are exceedingly beautiful.

The Principles of Bacteriology. By A. C. ABBOTT, M.D.
Fourth Edition, enlarged and thoroughly revised. London:
H. K. Lewis. 1897.

THIS is a text-book suitable for beginners. The author has restricted himself to a description of the instruments used, the preparation of the different culture media, the methods of sterilisation, the principles involved in the methods of isolation of bacteria, the study of colonies, the methods of staining, and a carefully arranged account of the different pathogenic germs. Chapters are also given on the systematic study of an organism, the inoculation of animals, the *post-mortem* and bacteriological examination of animals, infection and immunity, methods of

testing disinfectants and antiseptics, &c. We have carefully read the work, and admire the arrangement, the concise yet clear style of the author, as well as the special effort made throughout to attract the student's attention to minute details, for which purpose experiments have been suggested wherever possible. Though unacquainted with the previous editions of this work, it is evident to us that the author has made a special effort to bring his work up to date. For example, there is a full description of the bacillus of influenza, the bacillus of bubonic plague, Elsner's method of detecting bacillus typhosus in fæces, Widal's method of serum diagnosis of typhoid, &c. In a book meant for students one is surprised to find that the author has omitted to give (for the purpose of easy recognition) a short description of the most common non-pathogenic germs. In bacteriology, perhaps more than in any other science, a little knowledge may become a dangerous possession; and it certainly lessens the chance of mistaken diagnosis to be acquainted, morphologically and otherwise, with the common germs of putrefaction, as well as with the saprophytes which so frequently are found in air, water, &c. In spite of this omission, we can heartily recommend this book to beginners. There are one hundred and six illustrations, and a complete list of what is required in a beginner's laboratory has been appended.

Mastoid Abscesses and their Treatment. By A. BROCA, M.D., and F. LUBET-BARBON, M.D., Paris. Translated and Edited from the French by HENRY J. CURTIS, M.D., F.R.C.S. London: H. K. Lewis. 1897.

THIS volume is a translation of a memoir which was awarded the Prix Meynot by the French Academy in 1894. It opens with a short description of the pathological anatomy of the tympanum, mastoid antrum, and mastoid process, followed by a description of the paths along which infection may reach the tympanum and the surrounding air-cells communicating with it.

The subject proper is then dealt with in four chapters. I. Mastoid Abscesses—Symptoms, Diagnosis, Indications for Treatment, and Treatment of the Acute Forms of Mastoiditis. II. Mastoid Fistulæ—Physical Signs and Bony Lesions, Indications for Treatment and Operative *Technique*, Intracranial Complications. III. Chronic Suppurative Inflammation of the Middle Ear with Latent Mastoiditis. IV. Results.

The authors base this memoir on 143 operations performed by them, which makes their contribution valuable as the outcome of wide experience. In accord with the attitude of the aurist acquainted with the methods of modern surgery, we have our authors urging the early exposure, cleansing, and disinfecting of the cavities of the middle ear, and especially of the mastoid cells in cases of otorrhoea. The medical profession generally cannot too quickly recognise the advantage of this procedure in a large proportion of cases of chronic suppurative otitis media, which, meantime, for the most part are neglected.

Though there is nothing particularly original in the book, yet it is an interesting record of work in this department. The illustrations consist chiefly of reproductions of Godlee's already well-known coloured drawings depicting the anatomy of the "mastoid antrum."

The Cell in Development and Inheritance. Columbia University Biological Series. By EDMUND B. WILSON, Ph.D. London: Macmillan & Co. 1897.

THIS work, which forms the fourth of the above useful series, is one which will be welcomed by students of biology, and more especially by those who are interested in cell phenomena. In it the author endeavours to bring down to the date of publication all that is known of the cell in the two departments indicated by the title. Such an attempt to be of any value must be undertaken by one who is himself actively engaged in this fascinating field of research, and the author, by his own important contributions to the literature of the subject, is well qualified for the task which he has undertaken. It may be that he is somewhat too enthusiastic when he states, *e. g.*, that "a centrosome is necessarily present in all cells at the time of mitosis," but in general his statements are so careful and impartial that his work may be accepted as a valuable addition to the many treatises on the cell already in existence. The last chapter is of considerable interest as giving a *critique* of the later theories of inheritance and development in the light of recent research. To the work is added a glossary of cell terminology, which should be of particular advantage to students. Altogether, the book is one which may be well commended to those who are concerned either with normal or pathological cytology.

Religio Medici, and Other Essays. By SIR THOMAS BROWNE.
 Edited, with an Introduction, by D. LLOYD ROBERTS, M.D.,
 F.R.C.P. Revised Edition. London: Smith, Elder & Co.
 1898.

If the reader will turn to p. xxxvi of Dr. Lloyd Roberts' Biographical Introduction to this edition, he will find a list of nineteen separate editions of the *Religio Medici*, extending from 1642 to 1881. No stronger evidence could be adduced to prove that this work of Sir Thomas Browne's has long taken its place as one of the classics of English literature, and of a work so well known any criticism on our part would be superfluous. Any of our readers who do not possess a copy of this *vade mecum* of the physician's religion would do well to secure one of the present edition, which, as regards accuracy, typography, and binding, is all that could be desired by the most exacting bibliophile. Dr. Lloyd Roberts' biographical notes of the learned author are of great interest, and, from the pen of an ardent admirer as they obviously are, conspicuous for the impartiality of judgment they betray. He does not conceal the fact that in 1664 Browne's evidence secured the conviction of two wretched women for the then capital offence of witchcraft, and he points out that credulity touching occult subjects was certainly the weakest side of his character. This incident in the life of Sir Thomas Browne recalls the circumstance that in Paisley, so late as 1696, fully thirty years later, four persons were burned for bewitching Christian Shaw, daughter of the Laird of Bargarran. In this celebrated case, a well-known physician, Dr. Matthew Brisbane, who had held office as Dean of Faculty and Rector of Glasgow University, gave evidence in support of the view of witchcraft.

In this connection, it is of interest to quote Browne's own words on witchcraft:—"xxx. It is a riddle to me how this story of oracles hath not wormed out of the world that doubtful conceit of spirits and witches; how so many learned heads should so far forget their metaphysicks, and destroy the ladder and scale of creatures, as to question the existence of spirits; for my part, I have ever believed, and do now know, that there are witches." If this confession of faith, published in 1643, was not repudiated, we cannot wonder at the author's evidence and its disastrous results in 1664, and perhaps also—who knows?—in 1696 in Paisley.

But the fact that Sir Thomas Browne's science was not strong enough to counteract the evil influence of his super-

stition in no way detracts from the beauty and sublimity of many parts of his writings, from which thousands must have derived comfort and strength in fighting life's battle.

The other essays included in the present volume are—"Christian Morals," "Letter to a Friend," "On Dreams," and "Urn Burial." The volume is well worthy of being added to any library not yet possessed of a copy.

Elements of Latin, for Students of Medicine and Pharmacy.

By GEORGE D. CROTHERS, A.M., M.D., and HIRAM H. BICE, A.M. Philadelphia: The F. A. Davis Co. 1898.

THIS little volume will be of service to those studying Latin for medical or pharmaceutical purposes, but otherwise is not likely to be of use to the student of the classics. We wish to refer specially, however, to the section of it entitled Anatomical Proper Names and Their Origin. This is almost a reprint of the paper published in our issue for December, 1895, by Dr. James Finlayson. The writers have embodied some corrections made by the *New York Medical Journal* in reprinting Dr. Finlayson's list. The initials have been extended into full names here and there, and some errors in Dr. Finlayson's paper have even been repeated. A few mythological names (such as Atlas, Achilles, and Adam) which did not come within the scope of Finlayson's paper have been added. Löwe's ring (printed in the book "Lowe's") is attributed to the famous founder of our Faculty of Physicians and Surgeons. Peter Lowe died in 1610, and it is not at all likely that the macula lutea was then known or thought of. It is needless to add that this error has not been copied from Dr. Finlayson. Dr. Finlayson's article was an important one, and was reprinted in the *New York Medical Journal*. We think the authors of this little book might have at least acknowledged the source of their information.

Heart Disease: with Special Reference to Prognosis and Treatment. By SIR WILLIAM H. BROADBENT, Bart., M.D., and JOHN F. H. BROADBENT, M.A., M.D.(Oxon.) London: Baillière, Tindall & Cox. 1898.

WE have read this work with great pleasure and with much profit. It is the work of a sound practical physician, and its strong point is its thoroughly practical nature and aim. It is not a volume for the student but for the trained practitioner

fighting against disease. To him the common sense, the shrewd insight, and the practical recommendations of Sir William Broadbent will come as a great help. The book from board to board is essentially clinical. We are not bothered with elaborate descriptions of sphygmographs and pulse tracings, or with recondite physiological speculations as to arterial tension; but we are brought face to face with cardiac disease as we see it in the ward or in the sickroom. The salient phenomena are brought vividly before us, and the grounds upon which a reasonable prognosis may be formed are stated in terms the most clear and convincing. The strength of the author lies in his utterances upon diagnosis and prognosis. When he ventures upon pathology he is occasionally not on such sure ground; but in a clinical work of such value as the present such insecurities may be overlooked. On treatment the statements are temperate and rational. In his views upon the Schott treatment the author has in no sense been influenced or carried away by the "boom" which occurred in England a year or two ago, and of which we now hear comparatively little. Sir William Broadbent has already gained reputation as an acute physician by his work on the pulse; he has added to that in the publication of the present volume.

An Epitome of the History of Medicine. By ROSWELL PARK, A.M., M.D., Professor of Surgery in the Medical Department of the University of Buffalo, &c. Philadelphia: The F. A. Davis Co. 1898.

WE have pleasure in favourably recommending to the notice of our readers Professor Roswell Park's *Epitome of the History of Medicine*. Compared with the treatises of Sprengel, Leclerc, or Haeser, it is, of course, nothing more than an epitome, but an epitome of the history of his art is about all that the busy practitioner can hope to read. We think this is a very good one. It is well written, and the thread of continuity is well maintained throughout, so that the reader, having gone through the volume, will rise with a fair knowledge of the great periods and doctrines which have marked the history of medicine. The illustrations, including as they do reproductions of well-known portraits of many of the great men of medicine, much enhance the value of the book. The last portrait is that of Lord Lister, so that it will be seen the history is brought down as nearly as possible to the present day.

The Surgical Diseases of Children. By EDMUND OWEN, M.B., F.R.C.S. Illustrated with 5 Chromo-lithographs and 120 Engravings. Third Edition, Revised and Enlarged. London: Cassell & Co., Limited. 1897.

WE are not surprised to find that the last edition of this admirable work has been already translated into French. The present edition will certainly maintain the author's reputation. It is a storehouse of valuable and thoroughly practical information. The style is agreeable, the printing excellent, and the illustrations numerous, though not all of the highest artistic value; and altogether the book does genuine credit to English medical literature.

Edinburgh Medical Journal. New Series. Vol. II. Edited by G. A. GIBSON, M.D., F.R.C.P. Ed. Edinburgh and London: Young J. Pentland. 1897.

IT gives us pleasure to call attention again to the high standard of merit aimed at and attained under the new arrangements by the *Edinburgh Medical Journal*. The present volume contains more than six hundred pages of well printed matter, and some of the original articles are devoted to subjects of great interest and importance. The reports on recent advances in medical science do credit to the compilers, and the reviews and clinical records add to the interest of the book.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

SURGERY.

By GRANT ANDREW, M.B., C.M.

The Anæsthetic Question.—The many conflicting statements which appear in the journals from time to time regarding the advantages of one anæsthetic over another make it extremely difficult to form a correct opinion about the best and safest anæsthetic for routine surgical work. There seems to be an undercurrent of opinion at present among certain members of the profession here that for routine work chloroform should be supplanted by a combination of chloroform and ether (see below), or by nitrous oxide gas followed by ether. This latter method is being largely used in dental and eye work, and seems to be favoured by those who practise entirely as anæsthetists. That it is

generally safer than chloroform for such work there seems to be no doubt, the only drawback being the distressing sickness which follows its administration. The number of recorded deaths under chloroform throughout the country, and that when every precaution has been taken in the fear that such a result might happen at any time, makes the work of the surgeon doubly anxious. The practice of employing a trained anaesthetist, who takes the entire responsibility of the anaesthetic, is being much more taken advantage of now than formerly, a practice which enables the surgeon to give his undivided attention to the operation. The safety of the patient ought undoubtedly to be the first consideration, and no one will deny that in the hands of one specially trained in and wholly responsible for the administration of the various anaesthetics, there is less likelihood of accident.

Bearing on this subject three important communications were read at the meetings of the Society of Anaesthetists held in London on the 16th December and 20th January last.

The first paper was by Mr. Walter Tyrrell on "The Addition of Ether Vapour from a second bottle during Chloroform Administration by Junker's Apparatus."

He emphasised the fact that most of the alarms from chloroform are not due to the true anaesthetic effect of the drug upon the brain, but occur early in its administration, and are due to the direct action of chloroform on the heart. Hence the employment of the double bottle method, by which chloroform can be given and ether added as required for the particular case under treatment. It is not always necessary to add the ether vapour from the beginning, and it may not be necessary to use it at all, but it is a great comfort to have it connected with the apparatus ready to be turned on at a moment's notice should any pallor or shallow respiration occur. One can stop the chloroform at any moment and continue with ether, or vice versa, and proceed with a combination of both vapours in varying strengths.

Briefly, the apparatus consists of two Junker bottles with indiarubber tubes so arranged that one bellows works both bottles, one of which contains ether and the other chloroform. Between the bellows and the bottles, in the course of the tubing, there is inserted a Y-shaped piece with a little graduated tap on each bifurcation of the Y. The vapour from each bottle is again by a Y-shaped piece brought to a single tube, and thence to the face-piece.

Mr. Tyrrell thought it certain that the addition of ether counteracted the depressing effect of chloroform, but whether this was due to diminishing the amount of chloroform or to the direct effect of the ether, he was unable to say.

The second communication was by Dr. Flux on "A Case of Protracted Anaesthesia following the Administration of Nitrous Oxide Gas." A girl, *æt.* 19, well nourished and not anæmic, was seen by him at the National Dental Hospital. The girl was in good health except for a slight toothache. The case was one requiring extraction of two bicuspid teeth; pure gas was administered, and the administration was not pressed beyond irregular breathing. Both teeth were removed, but the patient did not come to. After the extraction of the teeth, in place of abrupt recovery the patient was in a state of calm and deep anaesthesia. Attempts were made to rouse her by slapping and pinching, but with no effect. Nitrate of amyl in a capsule was exhibited, but it merely produced a transient blush, and as there was no cardiac or respiratory failure, she was placed on the sofa for twenty minutes. The faradic current was then applied, but with no sign of discomfort. Ammonia and ether vapour applied to the nostrils were ineffectual. After about an hour and twenty minutes the pupils suddenly contracted, and she recovered as if nothing had occurred. As far as could be ascertained, she was in good health and was not emotional. She had had no sleep, however, for three nights, and had fainted in the ante-room while waiting for the gas, a fact of which the administrator had not been informed.

A third paper was read by Mr. Alexander Wilson on "Resuscitation in Emergencies under Anaesthetics." The emergencies arising from the excessive and unexpected action of the anaesthetic on the vital centres, exhibited by a

paralysis of the circulation and respiration, were specially considered, and were grouped into six divisions according to their mode of action, thus:—

1. External applications of an irritating nature, having for their object the exciting of respiratory movements as a result of reflex action, such as cold applications to chest, Corrigan's button to epigastrium, hot sponge to perineum, &c. It is sought to reach the respiratory centre by means of some widely diffused or intense stimulus, transmitted through some unparalysed tract or nerve centre, and so excite reflex respiratory action. To obtain this action a certain considerable degree of irritability or vitality must be present in the transmitting nerves and nerve centres, a degree of vitality which in the majority of cases of anæsthetic emergencies is absent. As the desired effect can be more certainly achieved by mechanical means, it is not advisable to waste time in the trial of such measures.

2. Procedures of a similar nature which originate respiratory movements—rhythmical traction on the tongue, dilatation of the sphincter ani. As regards traction on the tongue, the writer fails to see how, in a patient with respiratory paralysis, this manoeuvre can be beneficial, as in an unconscious patient such a proceeding has no appreciable effect other than clearing the air-passage and permitting free ingress of air. The employment of dilatation of the sphincter ani as an excitant of respiratory movements is based on the circumstance that interference with the anus provokes reflex expulsive efforts. As a mode of resuscitation it would be of value only as a means of raising the blood-pressure in the head were it possible to make it act; but as it is uncertain at all times, and ineffective in moderately deep narcosis, it may be discarded in favour of more certain methods.

3. Direct mechanical or electrical stimulation of the heart, rapid percussion, faradisation, acupuncture, position.

The selection of a reasonable method for stimulation of the heart is beset with difficulties. When the pulse gives evidence from its absence or feebleness that the circulation is failing, we do not know whether this failure is due to mere inhibition of the heart's action or to actual paralysis of the heart muscle, or whether the stoppage is caused by the heart having nothing to work upon from extreme fall in blood-pressure due to vasomotor paralysis. Whatever the cause of heart failure, intermittent pressure over the heart if the chest be compressible, or on the epigastrium if the chest be rigid, should be tried.

4. The performance of natural functions, such as respiration, by artificial means, and, as an adjunct to this, tracheotomy.

The writer is strongly of opinion that in failure of respiration from an anæsthetic it is not alone the absence of oxygen consequent on the cessation of breathing that endangers the patient, nor is the admission of air the chief factor in resuscitation. The beneficial effects of artificial respiration arise from the stimulation of the heart and the general rise in the blood-pressure.

Sylvester's method of artificial respiration is preferred to any other. In inflation air is apt to enter the stomach.

5. Measures to counteract the effects of failure of the circulation, which have for their object the raising of the general blood pressure, or the determination of blood to the vital nerve centres and organs—*e.g.*, transfusion, copious rectal enemata, pressure on abdomen, applying Eschsch's bandage to the limbs, the dependent position, artificial respiration.

Reviewing each of these measures *seriatim*, the writer concludes that artificial respiration associated with the dependent position is the only reasonable line of treatment.

6. Drugs introduced subcutaneously for the purpose of acting on the circulation, or as antidotes to the anæsthetic—nitrite of amyl, strychnine, atropine, ether, digitalis.

The place of subcutaneous remedies, in the course of treatment, if it exists at all, is at an early stage of the failure, or at a late stage of recovery when there is a sufficiently active circulation to convey them to the various organs.

Discussion followed this paper, and several points were emphasised.

Dr. Bowles said that he agreed that artificial respiration and tentative inversion were the two measures most likely to be useful, though he favoured Marshall Hall's method of artificial respiration, particularly when dealing with cases of empyema or when there is a possibility of fluid being drawn into the tubes. References were made to two cases of empyema that were literally "drowned in their own pus" (*Lancet*, April, 1897), and to a case of diphtheritic paralysis where the stomach contents were drawn into the lungs by Sylvester's method of artificial respiration.

Professor Schäfer spoke of the difficulty of counteracting the effects of paralysis of the vasomotor centre, as compared with the accompanying paralysis of the respiratory centre. In animals it is his invariable practice to give a minute dose of atropine before administering chloroform, so as to produce paralysis of the inhibitory nerves of the heart. If this is done it prevents a rapid fall in the blood-pressure. He advocated also the practice of the late Professor Roy and of Professor Adami of bandaging the abdomen; this prevents stagnation of blood in the portal system.

Dr. Silk referred to the prophylactic value of drugs, and strongly advocated the habit of giving strychnine ($\frac{1}{10}$ gr.) immediately after the induction of anaesthesia, and repeating the dose once or twice if necessary. He was inclined to take Dr. Leonard Hill's view that in cases of lightning-like cardiac and respiratory failure, where the anaesthetic has only been given for a minute or two, the patient should be raised to a sitting posture so as to empty the heart into the splanchnic area.

Dr. Barnard also spoke, but chiefly from a physiological point of view. He recommended the employment of morphia as a prophylactic.

Mr. Wilson, in reply, said that he doubted the advisability of giving strychnine either before, during, or after a severe operation, as so many cases recover without this treatment, which might in itself be dangerous.

[The transactions of the Society of Anaesthetists are fully reported in the *Clinical Journal*, 28th January, 2nd, 9th, and 16th February, 1898. See also lecture by Hewitt, *Lancet*, 19th February, 1898.]

Local Anaesthesia.—In the *Centralbl. f. Chir.*, December, 1897, Honigsmann, of Breslau, narrates the excellent results which have followed the employment of the method first introduced by Oberst, a method of service in minor operations on the fingers and toes. The part is rendered bloodless by an elastic band, and a small quantity of a 1 per cent solution of cocaine is injected in three or four places. Complete anaesthesia follows in from three to ten minutes. The solution of cocaine should be quite fresh, and prepared with sterilised water. By this method within the last six months Honigsmann has treated successfully 36 whitlows, 18 amputations of the finger, 12 cases of ingrowing toe-nail. Symptoms of cocaine poisoning were never observed, and the anaesthesia was absolute.

DISEASES OF THE SKIN.

By W. R. JACK, M.D., B.Sc.

Hydroa Aestivale in Two Brothers, associated in each case with Hematoporphyrinuria.—M'Call Anderson (*Brit. Jour. of Dermatol.*, January, 1898) reports these two cases. Both men are fishermen. The one is aged 26; the other, 23. In both cases the eruption affects the face, ears, and hands, and has been coming out in successive crops for a period of about twenty years. It usually appears in spring or early summer, and disappears at the beginning of winter, although in the elder brother it has persisted of late well into the winter. It is preceded for several hours by intense itching of the skin of the uncovered parts of the body. This is followed by the appearance of blisters, varying in size and contents. If small, they are

filled with clear serum ; if large, with a greenish fluid. They may be absorbed, leaving only a temporary discoloration, or they may rupture spontaneously in from two to eight days after their appearance. In that case healing takes place under a scab, and permanent scarring results. This has led to much deformity and contraction of the nose and ears, and to stiffness and deformity of the fingers. The appearances in both cases are identical. In both the urine is of a light Burgundy-red colour, permanently in the case of the younger brother, but only during the attacks in the elder. It was examined by Harris, who found no trace of blood or hæmoglobin. The normal pigment was replaced by a dark red pigment with four absorption bands, and irreducible by ammonium sulphide. It was an ally of M'Munn's urolæmatoporphyrin, intermediate between that body and hæmatoporphyrin. It had only been found, hitherto, in about half a dozen cases, and was still unnamed. Harris proposed the provisional name of meio-de-oxyhæmatoporphyrin.

Treatment of Soft Chancre by Irrigation.—Malusardi and Bonaduce advocate the treatment of soft chancre by daily irrigation with warm water. The temperature should at first be 40° C., and should be rapidly raised to 47·5° or 52°. The irrigation is continued for half an hour every day. The sore becomes clean in a few minutes, and of a lively red colour. The patient feels warm, and after a time breaks into abundant perspiration. When this occurs, the sore is dusted with iodol and covered with cotton-wool. In from two to eleven days the sore is transformed into a simple non-virulent wound, and cicatrises without the appearance of buboes. In their forty-one cases, the authors have never seen this complication.—(Abstracted in the *Blätter f. Klinische Hydrother.*, January, 1898, from the *Tribuna Medica.*)

Etiology of Herpes Zoster.—Hay (*Jour. of Cut. and Gen.-Urinary Dis.*, January, 1898), summing up his paper on this subject, arrives at the following conclusions:—

1. Among a number of zosteriform eruptions, zoster is a distinct disease that runs a definite course.
2. True zoster is of an infectious origin.
3. The herpetic eruption in genuine zoster is preceded by adenopathy in the neighbourhood of the eruption, and often by bilateral or even general adenopathy.
4. The eruption is in the nature of a trophic disturbance, and probably the infective agency has a selective affinity for the sympathetic ganglia, and segments of the cord and tracts supplied from these segments are affected rather than any individual spinal nerve.

Primary Syphilitic Affection of the Eyelids.—Gagzow (*Deutsche Med. Wochenschrift*, 10th February, 1898) adds another to the comparatively limited number of recorded cases. The patient was a child of fifteen months, whose parents were stated to be healthy, as was their other child. The sore was seated at the right inner canthus, and covered about one-third of the inner portion of the eyelids. It was approximately round, and about 1 cm. in diameter. Its edges were fairly sharp, little elevated, and not very hard. The glands in front of the right ear were enlarged, but not tender, and enlarged glands were found in the neck, axillæ, and groins. The sore was dressed with iodoform, and inunction commenced. It healed in eighteen days without leaving any persistent induration. Syphilitic angina appeared forty days after the first appearance of the sore. On examination of the father, mucous patches were found on the tongue. He said it was possible that he might have kissed the child on the eyes.

Conclusions of the International Conference on Leprosy. (Berlin, October, 1897).—In its final sitting the conference drew up a summary of the results attained, which is reproduced in the *Deutsche Med. Wochenschrift*,

21st October, 1897. The bacillus lepræ, discovered by Hansen, is the cause of the disease. The conditions of its existence and development, and the mode of its entrance into the body, are still unknown, but it seems from the proceedings that opinion may soon be unanimous with regard to the paths which it follows in the body. It was agreed by all that it occurs only in man. It is very desirable that further information should be obtained with regard to its excretion from the organism, especially by way of the nasal and buccal mucous membrane. These facts are of scientific interest. What is practically important is that all should recognise the contagious nature of the disease. Every leper is dangerous to his neighbours, and the danger increases in proportion to the intimacy of his relations with them, and the neglect of sanitary precautions. Although this is true chiefly of the poorer classes, it must be remembered that leprosy has been more than once transmitted to those in a better situation. The view that leprosy is hereditary continues to lose ground. Treatment has so far been successful only in palliating the effects of the disease. Even the serum treatment has given rise to no definite results. In view of its incurability, of the suffering that it involves, and of its contagious nature, it follows logically that isolation is the only radical and effective means of suppressing the disease. This view is confirmed by the successful struggle against leprosy in Norway, where a law exists compelling the isolation, even against their will, of those patients whose circumstances are so poor as to make them specially dangerous to their neighbours. The conference unanimously accepted the recommendations of Dr. Armauer Hansen, of Bergen, which were as follows:—

1. In all countries in which leprosy appears in certain localities or more widely distributed, isolation is the best means of preventing its spread.
2. The system of compulsory notification, of supervision, and of isolation, as carried out in Norway, is to be recommended to all nations possessing the means of giving force to it.
3. It must be left to the law, after consultation with the sanitary authorities, to determine in detail the necessary regulations, which must be adapted to the social status of the sufferers.

Xanthoma Diabeticorum. (*Brit. Jour. of Dermatol.*, January, 1898.) — Hope Grant showed, at a meeting of the Dermatological Society of Great Britain and Ireland, a case of this affection. The urine at first showed only a trace of sugar, and on two subsequent examinations none. The eruption differed from that usually described only in its being situated chiefly on the flexor surfaces. In the discussion, the president, Dr. Payne, remarked that several cases had occurred in patients suffering from transient glycosuria, who were not really diabetic. There was some doubt whether the condition was the same as ordinary xanthoma. French dermatologists attached great importance to the presence in large numbers of elastic fibres in the patches, and he had found them in one case which he had examined histologically.

New Treatment of Alopecia Areata.—Dr. Sabouraud, whose excellent works on the tinea are well known, has just published a new procedure in the treatment of alopecia areata, from which the following clinical and anatomo-pathological considerations are taken:—

1. Alopecia areata is essentially a recurrent affection; it recurs in about one-half the cases.
2. It is not a disease of the hairs, but a tegumentary affection.

Now, in lesions of this class, if we wish to act upon the derma, it is proved that we must first of all destroy the horny layer of the epidermis, which otherwise constitutes a varnish of almost complete impermeability. Starting with this principle, the author begins by applying upon the diseased patch a layer of the vesicating fluid of Bidet, and the following day, after having removed the blister, he applies upon the denuded corium a 15 per cent solution of nitrate of silver, with or without previous cocaine anaesthesia. If necessary, he renews these applications at the end of ten or fifteen days. He

thinks he can thus arrest the evolution of an alopecia at its onset, and that the results obtained are much better than those following other procedures. He recalls, further, that it was the regretted E. Vidal who advised the employment of fluid vesicatories in alopecia as giving relatively rapid cures.—(*Journal of Cutaneous and Genito-Urinary Diseases*, September, 1895.)

GYNÆCOLOGY AND OBSTETRICS.

By E. H. LAWRENCE OLIPHANT, M.D.

The Present Status of Gynæcology in Europe.—The *New York Medical Journal* has published during the summer months of 1897 a long series of articles by Dr. Joseph Wiener, jun., describing a year's visit to the chief gynæcological clinics of Europe. Dr. Wiener gives his impressions of the buildings he visited, their management, the position of the operators and their staff of assistants and nurses; and he goes on to describe the various methods of the operators, both in general principles and in details of technique, and ends with an interesting summary of his conclusions.

He landed at Hamburg, and visited Dresden, Berlin, Prague, Vienna, Italy, Switzerland, Brussels, Paris, and London. What struck him first was that most of the "foreign clinics" have government support, and are, as a rule, richly endowed. The University clinics have a large corps of assistants who devote all, or a large part, of their time to the special work for years. The assistants get what Dr. Wiener considers adequate payment, in addition to the remuneration they obtain from private courses. Where there are many assistants the nurses do not assist at operations. The nursing staff is inferior to the American, a condition of things arising from the absence of inducement for nurses to undertake work in private. Dr. Wiener was much pleased by the general hospital in Hamburg, which he describes, as also Prochownik's private hospital in the same city. He seems to envy Dr. Leopold the free hand he has as sole director and operator of the Royal Frauenklinik in Dresden. The Carola Haus in Dresden is supported by a Kasse or provident society, whose members have the right of admission and cannot be discharged, apparently, if they do not consider themselves fit to go out. The surgeon in charge (Crede) is honorary surgeon for life, but may admit private patients from whom he takes fees. Dr. Wiener describes Crede's gymnasium.

At Leipsic Säger works in a private hospital with as few assistants as possible, having his instruments within his own reach. Zweifel has charge of the University obstetrical and gynæcological clinics.

At Berlin the Royal Frauenklinik is in charge of Olshausen and Winter, while Landau, Martin, Mackenrodt, Dührssen, and others have private clinics.

The division of the Prague clinic into its German and Bohemian sections, under von Rosthorn and Pawlik respectively, is noted, as also the curious condition which forbids surgeons to have private hospitals of their own, but permits a man to keep a hospital for other men's patients.

In Vienna work is done chiefly in the General Hospital, under Chrobak and Schauta. Dr. Wiener's account of the Italian clinics is interesting, as they are not so much frequented by Scottish students as the German ones.

Inverardi, in Padua, has a large clinic with a separate room for abdominal work, so built as to be easily washed out. The students are separated from the operator by a glass screen, a very different condition of things from the operating room in Florence, as we saw it some years ago, where the students were in a very low gallery close round the table, which seemed as in a cockpit.

In Bologna he visited Calderini, and was much gratified, as an American must, to visit one of the oldest European Universities, see the room where Vesalius dissected and Galvani lectured, and at the same time find Novaro carrying out modern aseptic surgery in the most rigorous way.

In Florence Pestalozza has a large obstetric and gynaecological clinic where a separate operating room is devoted to abdominal sections; he follows modern German methods.

In Milan the hospital is sadly out of date as regards aseptic surgery.

The Swiss clinics are like the German. In each obstetrics and gynaecology are under one man. Those of Geneva and Berne are small; those at Zurich and Basle are more modern and larger. The one at Basle is as nearly perfect as it could be made, and cost about £52,000, which is remarkable when it is considered that Basle contains only 90,000 inhabitants. It is under the charge of Bumm. Dr. Wiener considers that Jacobs' clinic at Brussels is the finest private clinic he visited. It contains forty-five beds for non-paying patients as well as for private patients paying lower and higher fees. For these last a special room is provided for a relative of the patient. Dr. Wiener, later on, gives details of methods, but we may remark here that Dr. Jacobs uses a brass table for Trendelenburg's position in abdominal work; he also uses a brass table for vaginal cases. This has two raised metallic pans on which the buttocks rest to raise and fix the pelvis. The leg-supports are about a third of the distance from the foot to the head of the table to keep the patient's lower limbs clear of the operator. This method was introduced by Säger.

In talking of Paris Dr. Wiener remarks that the hospitals are supported by the city, and those who cry out for rate-aided hospitals may note that he says, "Naturally, we cannot expect them to be as well arranged as in other cities where the hospitals are largely, or entirely, supported by voluntary contributions. And, as a matter of fact, however good the work may be, I think we must confess that most of the Paris hospitals fall far short of our standard modern hospitals. In hardly any of them are the wards what they ought to be." Dr. Wiener goes on to remark on the inadequate number of nurses in Paris, "If we stopped to reflect in what condition our many splendid hospitals, so liberally supported by philanthropic citizens, would be were they all supported merely by the city, we should, I think, applaud rather than criticise the good work Paris is trying to carry out."

Of the London hospitals he remarks we have a right to expect them to be better arranged than in Paris. The wards are very clean, neat, and well kept, in strange contrast to what one sees in Paris, but the operating rooms are not in strict keeping with the demands of modern asepsis.

(To be continued.)

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**GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR
THE FOUR WEEKS ENDING 19TH FEBRUARY, 1898.**

	WEEK ENDING			
	Jan. 29.	Feb. 5.	Feb. 12.	Feb. 19.
Mean temperature, . . .	47·2°	43·2°	42·6°	41·4°
Mean range of temperature between day and night, . .	7·9°	9·4°	10·3°	11·0°
Number of days on which rain fell,	1	6	5	5
Amount of rainfall, . . ins.	0·10	1·11	0·81	0·68
Deaths registered,	251	260	312	302
Death-rates,	18·0	18·7	22·4	21·7
Zymotic death-rates, . . .	2·4	2·9	2·9	3·2
Pulmonary death-rates, . .	5·0	5·2	6·2	6·7
DEATHS—				
Under 1 year,	60	62	74	45
60 years and upwards, . .	58	50	63	55
DEATHS FROM—				
Small-pox, . . . . .	...	...	...	...
Measles,	6	7	11	13
Scarlet fever,	1	4	3	5
Diphtheria,	1	5	3	2
Whooping-cough,	18	15	15	13
Fever,	2	2	2	5
Diarrhœa,	6	8	6	7
Croup and laryngitis, . .	...	3	1	1
Bronchitis, pneumonia, and pleurisy,	43	59	63	45
CASES REPORTED—				
Small-pox, . . . . .	...	...	...	...
Diphtheria and membranous croup,	16	9	11	12
Erysipelas,	14	22	23	20
Scarlet fever,	76	62	78	64
Typhus fever,	5	1	...	1
Enteric fever,	11	13	12	23
Continued fever,
Puerperal fever,	2	1	1	2
Measles,*	248	259	235	374

* Measles is not notifiable.

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ORIGINAL ARTICLES.

THE PATHOLOGY OF ANTE-NATAL LIFE.¹

By J. W. BALLANTYNE, M.D., F.R.C.P.E., F.R.S.E.,
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GENTLEMEN,—It is an inadequate and inaccurate view of the life of the individual which regards it as beginning with birth and ending at death. Theology teaches us that death does not end all; and no obstetrician can be in doubt that birth does not begin all. Birth does not mark a beginning, but a stage in life's progress. Birth is in one sense a beginning, it is the beginning of post-natal life; but the very words used imply that there has been an ante-natal life. Further, the post-natal is not independent of the ante-natal; on the contrary, it is largely the direct continuation and outcome of it. The life is unchanged, but the environment has been altered; birth marks the change from surroundings which are intra-uterine to those that are extra-uterine. The transition is abrupt and the surroundings are very unlike, nevertheless the life is continuous.

¹ An address delivered before the Glasgow Obstetrical and Gynaecological Society, 23rd February, 1898.

THE PERIODS OF LIFE—POST-NATAL.

By popular custom and with the consent of science, extra-uterine or post-natal life has been divided into periods. There is the period of old age with its terminus, death; there is the time of middle or adult life; there is youth; and there is childhood or infancy. Even in a strictly scientific sense, however, death is not really the terminus of life, for in many cases before that event has occurred the individual has thrown off a vital cell which impregnating another unit of life or being impregnated by it has carried on the existence of both. Each individual organism consists then of a perishable part, which in point of size bulks largely, and of an imperishable part, microscopic in size but intensely vital in property. The imperishable part modern science has called the germ-plasm, and its imperishability is denominated its continuity. The same idea, however, was present in the mind of an exact thinker and a judicial writer of the old time when he said, speaking of Levi, that he was yet in the loins of his father (great-grandfather) Abraham when Melchisedec met him. Adult life is the epoch most largely concerned in reproduction; in infancy and childhood the most noteworthy incident is steady and continuous growth of the body; while in youth it is more especially the growth of one set of organs, the genital, that is conspicuous. At the same time while post-natal life may be divided into these periods, they must not be regarded as well defined or as absolutely distinct from each other. There are normal limits within which adult life may be prolonged or childhood shortened, and in a certain sense one part of the individual may be in one period and another part in another. Without crossing over the boundary into pathology it may be quite legitimate to describe a man as having the brain of a youth or of a child.

Extra-uterine is linked to intra-uterine life by the short period known as that of the new-born infant. Nevertheless, although it only lasts for about a month, most important physiological changes are going on in it. It is a time of metamorphosis: organs which during intra-uterine life have had little or no call put upon them are suddenly brought into functional activity, while many of those which have been physiologically active in foetal life begin to atrophy from disuse. The organism is adapting itself to its new environment.

ANTE-NATAL LIFE—PHYSIOLOGY.

Like post-natal life the ante-natal existence of the individual may be marked off into periods. These are the foetal, the embryonic, and the germinal epochs. During the first of these, the foetal period, the organism shows its vitality chiefly by growth along lines which have been already definitely laid down. In this respect it resembles the post-natal periods of infancy and youth. It is true that the intra-uterine environment has very distinctive and peculiar characters (the unborn infant exists in a fluid medium of practically constant temperature, it is protected to a large extent from traumatism by the maternal structures, and it is shut in from the light); further, the foetus has several of its organs almost inactive and its most important and most active organ, the placenta, is extra-corporeal; nevertheless, the chief phenomenon of foetal life is growth, rapid and continuous, along lines already indicated. Within seven months, which is the length, roughly speaking, of foetal life in the human subject, the organism increases from a structure one inch in length to one measuring twenty inches, and its increase in weight is proportional.

During embryonic life, which may be regarded as beginning with the differentiation of the three layers of the blastoderm and ending about the end of the second month, a very different process is going on. There is growth as in the foetal period; it is not, however, simple increase but evolution or development that is the striking feature of the life of the embryo. The lines along which future growth is to take place are nearly all laid down in the embryonic period. The physiology of the embryo is development, that of the foetus is growth. As in the history of the rise of a great modern city there is record of a stage in which the main avenues of traffic are sketched out and natural obstacles overcome or utilised, to be followed by a period during which growth goes on along the lines of the plan, so in the story of ante-natal life there is the embryonic period, in which the cellular elements are arranged in groups to form organs, to be followed by the foetal, in which these organs simply increase in size, and by their activity lead to the growth of the whole organism.

About germinal life in the human subject we know little, but it may be regarded as the period which ends in the mysterious phenomena of germ and sperm maturation, of the expulsion of the polar globules from the ovum, and of the

atrophy of the female element of the sperm-cell, and of the impregnation of the ovum by the spermatozoon, with the resulting formation of the morula mass. Prior to impregnation the ova and spermatozoa have simply led the life of specialised cells in the body, the former in the female, the latter in the male. Doubtless they have been impressed to a certain extent with the individuality of the organism, with what may be called the peculiarities of its vitality. Further, these cells are the descendants of others which have in their turn been component parts of other organisms which have also had their individuality. So in the earliest epoch of ante-natal life, just as in the later epoch of post-natal existence, we find ourselves confronted by the continuity of vital action; the individual is the link which enables the vitality to be continuous.

Before passing to the consideration of pathology in these relations, I must point out that whilst ante-natal life is thus divisible into three periods, these are not sharply marked off from one another any more than are the epochs of post-natal life. One part of the organism may be yet in the embryonic stage while the others are in the foetal phase. An example of this is met with in the slower evolution of the limbs as compared with the trunk of the body and head, and probably no two parts pass out of the embryonic into the foetal condition at just the same time. To revert to the comparison I have already instituted, the progress of a city is not equal throughout, one part, *e.g.*, the suburbs, may be little more than planned when another, *e.g.*, the centre, is already built. Just as the first month of extra-uterine life, more than any other, is a time of metamorphosis and of transition, so the third month of intra-uterine life, more than any other, is characterised by readjustment and by change. Most of the organs pass at this time from the embryonic into the foetal state, just as in the first month of life most of them again pass from the foetal into the infantile condition. The bearing which this form of transition from one period to another has upon pathology will be soon made apparent.

Such, then, is a sketch of the periods into which ante-natal life may be divided—the foetal, the embryonic, and the germinal; but, so far, I have made reference only to the physiology of these epochs and not at all to their pathology. I have considered only the normal at first in order to simplify, as far as possible, the whole problem. Now, in the light of what has been already stated, we may with more profit discuss the incidence of the morbid. We shall find that the pathology of ante-natal life is closely bound up with its physiology.

ANTE-NATAL PATHOLOGY.

Post-natal and ante-natal life have this, at least, in common, that they are both subject to disease and death. As a French writer (Vernet) has expressed it, "L'œuf fécondé jouit de la vie, sujet par conséquent aux maladies, à la mort;" and I may roughly cast the same idea into verse as follows:—

The egg, impregnated, with vital ardour glows,
Subject thereby to maladies and death's destructive throes.

In the very springs of life there is the possibility of death; the ante-natal death-rate must be very high, and, I doubt not, that all estimates which have been formed of it fall below the reality. Short of actual death, however, there is pathological change, and there is a morbid anatomy of intra-uterine life which has not up to the present time received the attention that it demands in view of the far-reaching effects it has on post-natal life. The pathology of ante-natal life is a subject which has been comparatively little studied; and the cause of this neglect has been not single but complex. The inherent difficulty of the research, the practical impossibility of exact diagnosis, the discouraging results of attempts at ante-natal therapeutics, the delayed progress of the study of ante-natal physiology, and the conflicting views regarding human embryology, have all played a part in discouraging investigations; but probably the most potent factor in delay has been the simple circumstance that the subject dealt with *ante-natal* affairs. The difficulties were not insurmountable; but investigators have been held back by the wide-spread belief that (so to say) the game was not worth the candle. The mercantile value, if I may so put it, of foetal life has been placed very low compared with that of the adult or of the child. In no country in the world save that in which the population is stationary or diminishing does the necessity of conserving and preserving foetal life obtrude itself upon the notice of the political economist or of the physician. The specialist in ante-natal disease, even in these days of specialism, is not wanted. Beyond all these reasons which have led the student to neglect the pathology of ante-natal life, I believe there lies yet another. There is, I think, a very prevalent notion that ante-natal pathology is not subject to the same laws as post-natal, that it cannot be regarded as similar to it—that it is, in fact, something apart,

something mysterious. What I wish to try to show in this address is that in all probability *the causes of morbid processes are the same in post-natal and in ante-natal life.* That the effects produced by these causes differ markedly there is no gainsaying; but the differences are to be regarded as due to altered environmental conditions and to the peculiarities in the structure of the organism acted upon.

I do not suppose that anyone doubts that the same etiological factors in pathology are present in all the periods into which extra-uterine or post-natal life has been divided. The young, the aged, and the middle-aged are alike subject to the influence of injuries, of poisons, of microbes, and of parasites. It is true that at certain ages the individual is more liable to certain forms of disease and more or less free from others. It is also to a small extent true that some diseases show certain slight differences in their manifestations according to the age of the person attacked by them—an example of this is found by contrasting the rheumatism of middle life with that of childhood—but manifestly these differences are not due to variations in the nature of the causes acting, but to alterations in the structure of the parts acted upon and in the environmental conditions. Peculiarities of this kind are specially evident in the diseases of the new-born infant, some of which have almost a pathology of their own, and it is precisely during this short period in extra-uterine life that the organisation of the body differs most from what it afterwards becomes. Such maladies as jaundice of the new-born, sclerema neonatorum, trismus neonatorum, and Winckel's disease owe their peculiar characters not to anything unusual in the causes which produce them, but rather to the fact that the causes are acting upon organs and tissues which are in a state of transition between the foetal and the infantile stage. It is probably partly on this account also that these causes produce such fatal results, for as everyone knows the mortality in the first days of life is truly appalling. Certainly the change from an intra-uterine to an extra-uterine existence must severely try the organism.

PATHOLOGY OF FŒTAL LIFE.

During foetal life, as distinguished from embryonic, the organism is subject to diseases. Morbid causes acting upon the foetus produce diseases in it. More than ten years' study of the problems of ante-natal pathology has led me to the conclusion that the foetus is liable to the same diseases as the

infant, the child, and the adult. It enjoys a partial immunity from the attacks of certain parasites which produce skin diseases in extra-uterine life, and it is to some extent protected from external violence by the maternal structures and the liquor amnii. On the other hand it is apt to be affected with certain maladies in a peculiarly aggravated form, and it is exposed to one gross traumatism, parturition. Nevertheless it is, I believe, true that the morbid causes which act upon the foetus are identical with those which are effective in later life. The peculiarities of foetal maladies are largely due to the peculiarities of foetal environment and of foetal physiology. Some illustrations of this may be given.

Foetal ichthyosis of the grave type is a disease in which the thickening of the epidermis is of so marked a kind that it has on this account been asserted by some that it is not the same malady as the ichthyosis of extra-uterine life. The probable explanation, however, seems to be that the intra-uterine environment permits the continuance of life with a degree of cutaneous morbid change which would render post-natal existence impossible. As a matter of fact infants with advanced foetal ichthyosis rarely survive their birth by many hours—the horny epidermic plates surrounding the mouth make suckling impossible, and the interference with the cutaneous functions leads to congestion of the internal organs and especially to inflammatory states of the lungs and kidneys. Probably also the enormous epidermic proliferation may be connected in some way with the existence of that peculiarly foetal and transient structure, the epitrichium. General foetal dropsy, also, is a disease, or rather a symptom of several diseases, which reaches an altogether unprecedented degree of development *in utero*. With marked and deforming general anasarca, and with much fluid in the cavities of the peritoneum, pleura, pericardium, and cerebral ventricles, the foetus is still able to drag on in the uterus an existence which lasts till birth, even until birth at the full time. This peculiarity of foetal diseases I, some years ago, dubbed their “potential mortality.” The foetal environment and mode of life permit the existence of an amount of disease quite incompatible with the maintenance of extra-uterine life—the foetus is potentially dead, it will die as soon as it is born. Further, the fact that certain organs in the foetus are almost or quite quiescent, *e.g.*, the lungs, makes it possible for them to be seriously altered in structure without being affected in function; as soon, however, as birth occurs a sudden call is made upon these organs, and at once their potential morbidity

becomes real. Truly, in many cases, it may be said that the cause of death is birth. Many other instances of this peculiarity of foetal disease might be given, such as occurs in foetal ascites, hydronephrosis and cystic kidney, and in foetal endocarditis; but these must suffice.

Foetal maladies differ not only in degree but also in character from those occurring after birth. Examples of this are found in foetal small-pox and foetal typhoid. At the time of birth the variolous eruption may show itself in the papular, pustular, or cicatricial form, according as the disease had existed a longer or a shorter time before labour supervenes. The face is frequently almost free of the eruption; the pustules resemble those met with on mucous surfaces rather than on the skin in extra-uterine life; there is a less degree of suppuration; crusts are seldom formed; and the resulting cicatrices are feebly marked. These peculiar characters of foetal variola find their explanation in the fact that *in utero* the skin is kept moist by the liquor amnii, and is not under the influence of light and the atmospheric air. In foetal typhoid fever it is rare to find the characteristic intestinal lesions, a circumstance which may be due to the comparatively quiescent condition of the bowel in ante-natal life, or to the infection of the foetus by the way of the placenta, instead of by the mouth and stomach. In post-natal life it is uncommon to meet with cases of typhoid without intestinal lesions, although such do occur; in the ante-natal state it is rare to find cases with them. This leads me to advert for a minute or two to the relation of the placental economy to foetal diseases.

The fact that the unborn infant is brought into intimate and peculiar relations with the chemico-vital processes of the mother by means of the placenta is, at the same time, an advantage and a disadvantage. It is on account of this parasitic dependence that the foetus is able to continue an intra-uterine existence with several of its viscera in a far advanced stage of disease; but it is also on this account that it is exposed to fevers and microbic conditions affecting the mother, and to morbid alterations of her blood. We do not yet fully understand the mechanism which regulates the transmission of diseases from mother to foetus, but it would seem that under apparently similar conditions (*e.g.*, in twins) the infection may or may not pass through the placenta, and it is apparently necessary to believe that hæmorrhage in the placenta is not a *sine qua non* in the cases in which germs or their products traverse the afterbirth. Recent investigations

on the structure of the amnion and on the liquor amnii suggest that possibly infection may occasionally find its way from the maternal blood through the amniotic fluid to the mouth and stomach of the foetus. *In utero* also, as in after life, the same law of individuality may hold good which brings it about that a certain percentage of organisms, placed under apparently identical conditions of risk of infection, escapes it. The placenta, therefore, is not an unmixed boon to the foetus; but, further, it may become an immediate and pressing danger. It is, in its foetal portion, an organ of the foetus although an extra-corporeal one; it is also the most vulnerable of the organs with which it is supplied. It results from this that placental lesions very quickly endanger the life of the unborn; and everyone knows the frequency with which such are followed by the premature termination of pregnancy.

What has been said concerning the transmission of diseases through the placenta or liquor amnii to the foetus may be repeated with regard to the passage of poisons such as lead, arsenic, morphia, and alcohol. Less, however, is known regarding their action in producing foetal diseases, but this much can be affirmed that lead poisoning in the mother in pregnancy may be followed by the birth of an infant with paralytic and other symptoms of saturnism. The experiments of Porak go to show that the placenta may with certain poisons do what the liver accomplishes in later life, namely, store them up in its substance. It may thus prevent their passage to the foetus, but, in doing so, the placenta may have its own functions so far interfered with as to lead to abortion or premature labour.

During foetal life, then, the organism is subject, just as it is in later life, to the maladies which are caused by microbes and their toxins and by poisons, mineral and vegetable; it may also be affected by diseases which, in the absence of fuller knowledge, we must call idiopathic; and it may be wounded or bruised even inside the maternal protecting structures. Its pathology, therefore, agrees in its etiology with that of later life, but differs in some of its characters in accordance with the peculiarities of the environment. The foetus also may die *in utero*, and the well-known *post-mortem* changes, macerative in character rather than putrefactive, evidently owe their distinguishing characters to the intra-uterine surroundings which, in the great majority of cases, prevent the access of air to the dead tissues. It has sometimes been affirmed that death *in utero* was unaccompanied

by rigor mortis; but I believe that this is not correct, and I have elsewhere¹ stated my reasons for this belief at considerable length. The rigor mortis which affects the foetus may differ in some of its features from that of the infant, *e.g.*, in the time of its onset and persistence and in its degree, but that it occurs is, I think, undoubted. In order to complete the summary of the morbid conditions which may develop in the foetal period of ante-natal life, it is necessary to state that probably every variety of neoplasm may be met with; but into this subject it is impossible here to enter, for it contains problems which would require an extended discussion.

PATHOLOGY OF EMBRYONIC LIFE.

Quite distinct from the pathology of the foetus is the pathology of the embryo. The morbid states which arise during embryonic life are so peculiar, so special, that it is no wonder that they have been placed by themselves in text-books of pathology and regarded as something apart. It is only now beginning to be recognised that the pathology of the embryo is after all a part of general pathology, and is subject to the same laws. In a word, *embryonic pathology is teratology*; and, as Duval² pithily puts it, teratology is truly a chapter, but also a very special chapter, of pathology ("La tératologie est donc bien un chapitre, mais un chapitre tout particulier, de la pathologie"). Let me indicate briefly what this great generalisation means.

It will be remembered that the life of the embryo consists in the evolution of the three layers of the blastoderm into the complex aggregate of organs and tissues which make up the body of the foetus. The embryo has no other functions than this—this is its one function. Now, when a morbid cause of any kind acts upon a foetal or adult organism it produces changes which interfere with its functions, *e.g.*, nutrition, respiration, excretion, and the like. In this way a disease is set up. When the same cause acts upon the embryo it interferes with its one function, the formation of organs. In this way a monstrosity, a malformation, or a structural anomaly is produced. In the one case the result is pathological, in the other it is teratological. Complete proof is not yet forthcoming, but I believe it will be furnished, showing that the causes of diseases are also the causes of monstrosities. The way in which these causes act is no doubt different, and the

¹ *Teratologia*, 1895, ii, p. 96.

² M. Duval, *Bouehard's Traité de pathologie générale*, 1895, i, p. 164.

organism upon which they act and its surroundings are widely different; it is in this manner that the vast difference between the results, a disease and a monstrosity, is produced. We speak of pathogenesis in the one case, and of teratogenesis in the other; but the same ultimate causes, traumatism, toxins, microbes, poisons, lie behind both.

The experiments of Dareste, Panum, Warynski and Fol, Lombardini, and especially of Féré, have thrown much light upon the causes of monstrosities and their mode of action. The embryo chick is the organism in which it has been found most convenient, artificially, to produce monstrosities, although a certain number of observations has been made on mammalian embryos. In the earlier experiments the means employed consisted in partially varnishing the eggs during incubation, in raising or lowering the normal temperature in the incubator, and in shaking the eggs or wounding their contents. By these measures it was found possible, constantly, to produce a certain percentage of chick monstrosities; but it was not very evident how the information thus obtained could be applied to the elucidation of human teratology. Far more valuable results have recently been obtained by Féré, who has experimented by injecting into the albumen of the egg at the beginning of incubation various substances known to be pathogenic when acting upon the adult or foetus. The results have been teratogenic.

Among many substances, which have been found to be teratogenic, may be mentioned the alcohols and isoalcohols, nicotine, the toxins of tubercle and diphtheria, mercury, atropine, hydrocyanic acid, and morphine. To a certain extent, also, the agents which are most pathogenic or most poisonous are also most teratogenic. The alcohols can be arranged in an ascending series according to their power of producing terata, beginning with ethylic alcohol and going on to methylic, propylic, butyric, and amylic. It may yet be found possible to group all the substances which act teratogenically in a series according to their relative virulence, and it will then be interesting to note whether those most powerful teratologically are also most effective pathologically. Certainly the alcohols which are most toxic are also most teratogenic.

While the ultimate causes of monstrosities are doubtless such agencies as have been referred to above, their mode of action presents very special and difficult problems for solution. During the embryonic period there seems to be good reason to believe that the amnion has a very important bearing upon

these problems. It is the presence of the placenta which, to a large extent, impresses upon foetal pathology its peculiar characters; and in the same way it is the presence of the amnion that accounts for much that is distinctive in the pathology of the embryo. That the allantois and umbilical vesicle also play a part in producing malformations is, I believe, true; but it is specially the amnion that moulds the structural destiny of the embryo. The importance of the teratogenic rôle of the amnion has been fully demonstrated experimentally by Dareste and others. One of the earliest phenomenon in embryology is the development of the extra-embryonic somatopleure to form the amnion, and anything which interferes with its evolution will cause disturbance in the growth of the embryo. It is probably on account of defective development of the head-and-tail folds that the terata with anencephaly, spina bifida, and symphodia are produced. The delayed separation of the amnion from the body of the embryo, as in cases of absence of the liquor amnii, will result in the action of pressure; and the effect of the pressure will be the arrest of development in the stage then reached. The rest of the organism not subject to this pressure will go on developing, and so, ultimately, an embryo will be produced with one part or several parts in a stage of evolution anterior to that reached by the rest. A temporary and transient phase has for part of the body become fixed and permanent. If one imagine a continuous photograph of the evolution changes in the organism, and if one further imagine that the changes in the head, thorax, abdomen, and limbs are represented by parallel photographic strips, then it is easy to understand that so long as the strips continue to move synchronously, as in a cinematograph, the picture of the phenomena will be normal and perfect. So soon, however, as one of the strips stops moving or slackens its rate of progress, something very abnormal, monstrous in fact, will be presented to the eye of the observer. The abdomen may be found in an early stage of evolution while the rest of the body has moved on into a later phase. In some such way exomphalos may be produced. The comparison is, at best, an imperfect one, for in teratology other factors come into play, and the continued evolution of the rest of the body will in time come partly to mask the part which has had its progress stopped, continued pressure will cause fusion of neighbouring developing parts, and so forth. An instance of this is found in the sireniiform foetus in which amniotic pressure arrests the development of the tail end of the embryo and of the lower limbs, then causes rotation of the stunted limb-buds outwards and backwards.

and finally leads to greater or less marked fusion into one limb of the originally separate ones.

While fetal pathology is concerned with diseases, and embryonic pathology with monstrosities, both the foetus and the embryo are subject to death. Here, again, the nature of the organism and its surroundings have much to do in determining the character of the morbid changes which result. Maceration is characteristic of foetal death: dissolution and mummification mark embryonic death. There is some reason to believe that although the foetus is dead yet its annexa may continue to live, and so there are also some grounds for supposing that the embryo may die, and the rest of the blastodermic vesicle go on growing. Into the subject of the curious forms of abortion sac which are thus produced, Giacomini has entered, and while he has discovered many interesting facts, many questions still remain obscure. I have met with three cases, in two of which the abortion sac contained a nodular embryo of only 2 or 3 mms. in length, instead of one of 5 or 6 cms., while in the third sac the most minute examination revealed no embryo at all.

Just as the transition from foetal to infantile life is marked by a terrible mortality, so, I believe, the passage from the embryonic economy to the foetal is accompanied by a great destruction of embryos. Everyone knows how common is abortion at the second and third month; and, while several causes have been adduced to explain this, it is reasonable to suppose that the radical changes which mark the replacement of embryonic conditions by the foetal environment lead to embryonic death, and so to emptying of the uterus.

Now, while it is true that morbid causes produce diseases in the foetus and monstrosities in the embryo, it is not always possible to distinguish between what is a disease and what is a monstrosity. The reason is not difficult to find. The whole organism does not pass out of the embryonic into the foetal stage at the same time: one part or organ may be yet in the stage of construction, of evolution, when the part next to it has taken on its mature form, and has become functional. An instance of this is met with in the limb-buds, which are still embryonic when most of the internal organs are in the foetal state. A morbid cause, therefore, acting upon two parts of the organism may produce a disease in the one and a deformity in the other. This is one reason why the so-called foetal bone diseases and the malformations of the limbs are so difficult to understand. What we regard as peculiar bone diseases, and try vainly to classify with post-natal osseous lesions, may be

really malformations; while more or less complete absence of the limbs or their rudimentary state may be either the results of disease or of arrested development.

It would be contrary to what we know of pathological states in post-natal life if we were to find sharply defined and clearly delimited morbid conditions in ante-natal existence. It is not with well-marked types but with the intermediate types, the connecting links, that difficulty is found in classification and in comprehension. This is true of both post- and ante-natal life. Over these difficult cases, however, I shall not linger, for what I wish in this paper to do is to lay down general principles rather than discuss individual instances.

Even in post-natal life some few parts of the body remain in an incompletely developed form for some years. A good example of this is found in the uterus, which does not take on its adult characters or begin to functionate till the period of puberty. If, as sometimes happens, the uterus retain its foetal or infantile form in adult life, the result produced is a malformation, and is usually described as such. In this sense there is, as it were, a projection of the embryonic state through the foetal into the post-natal. Cases such as the above, while they increase the apparent complexity of the problems of pathology, serve to emphasise the general principle that morbid causes acting upon embryonic states produce malformations or monstrosities, and that the same causes produce diseases when they influence fully formed organs and tissues.

PATHOLOGY OF GERMINAL LIFE.

Comparatively little is certainly known of the pathology of the germ, and what information we possess has been almost entirely gained from the study of the lower animals, and even of invertebrate organisms. The great phenomenon of germinal life is impregnation with its antecedent phenomena of maturation and polar extrusion, and its subsequent phenomena of nuclear division and the formation of the morula mass. It is, therefore, to be expected that morbid causes, acting during the germinal epoch, will manifest themselves in results determined by the physiological characters of germinal life. There will be a disturbance of the normal progress of the phenomena of impregnation and segmentation. Experiments upon such organisms as ascidians and echinodermata have shown that such morbid causes as quinine, chloral, and cold, stop karyokinesis, while partial destruction of the segmentation spheres led to the production of monstrous fractions of individuals ("monstres

fractions d'individu"). These experimental investigations by Hertwig, Chabry and Roux, and others, prove that monstrosities of a very advanced type result from the action of pathological agencies (traumatic or toxic) during the segmentation of the ovum. It is difficult to draw any deductions therefrom regarding the human germ, for it is scarcely conceivable that such a rudimentary organism as the fraction of an ovum could continue to develop *in utero*; but the well-known placental parasites, which are really only portions of a foetus, are brought to the full term through the presence of a normal twin, and in them it may be legitimate to look for resemblances to the artificially produced ascidian fragments.

The phenomena of impregnation may also be interfered with, and the tendency of modern research is to regard the very interesting terata, known as double monsters, as due to such interference. What is known as polyspermy, or the entrance of more than one spermatozoon into the ovum, is now the most strongly supported theory of diplogensis. Further, it is possible that certain very rudimentary and puzzling structures, such as dermoid cysts and teratomata, may originate in absence of the normal male element in impregnation and in a consequent imperfect parthenogenetic development of the ovum.

The pathology of germinal life is, therefore, probably teratological in type, and so resembles the pathology of the embryo. At present it would be unprofitable to attempt to classify teratological productions according as they were developed in the germinal or embryonic epoch of ante-natal life. The only suggestion that may be hazarded is, that while monstrosities by defect are characteristic of embryonic pathology, monstrosities by excess (polysomatous terata) seem to be the special product of germinal pathology. Even this generalisation, however, is not very firmly based.

So far, however, as experimental teratogeny has gone it would seem that the same morbid causes (toxic, microbic, traumatic) are at work in the germinal as in the other epochs of ante-natal and post-natal life. In the meantime pathology must wait upon physiology, for we cannot expect to know much about morbid processes in the human germ till we know more of its physiology, and of that we are present wonderfully in the dark.

RECAPITULATION—ETIOLOGICAL UNITY.

So far, therefore, as our knowledge of the pathology of post-natal and ante-natal life has carried us, it would seem

that the same morbid causes are in action in all the periods into which the existence of the organism has been divided. The etiological factors of post-natal pathology, such as microbes and their toxins, poisons, mineral and vegetable, and thermic and traumatic states, have been found to be also the causes of pathological developments in the foetus, embryo, and germ. It has further been shown that probably the most effective morbid agencies in post-natal life are also the most active before birth. The results of the action of these factors differ widely, but the differences can be explained by differences in environment and in the structure of the organisms acted upon. Teratology is thus brought into line with pathology, of which it is simply an obscure but not unimportant department; and teratogenesis is seen to be simply pathogenesis acting on an immature organism. There is a unity in morbid causes.

HEREDITARY TENDENCIES.

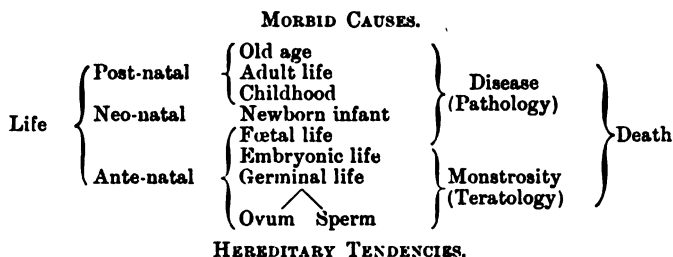
Manifestly this would be an incomplete sketch of ante-natal pathology if it contained no reference to hereditary tendencies. In addition to the external agencies, microbic and toxic, which determine disease in post-natal life, there is the predisposition to certain maladies, and the incomplete or complete immunity against others which heredity brings to the organism, and which gives to the organism its individuality. In ante-natal life, also, hereditary tendencies are evident both in the foetal and in the embryonic periods. Many foetal diseases, such as ichthyosis, general dropsy, foetal rickets, &c., are hereditary. In the nature of things it is seldom that direct heredity can be demonstrated, for, as has been explained, infants with such maladies rarely live, and therefore their progeny cannot be referred to; but that form of heredity known as family prevalence is very common in most foetal maladies. I have elsewhere¹ referred to many instances of this in congenital skin lesions, and have specially noted cases in which a woman had by one husband healthy children, and by a second spouse ichthyotic or dropsical infants. The sperm as well as the ovum may carry these tendencies.

In embryonic life, also, the same tendencies are met with, and I have recorded cases of the birth of two and even of three anencephalic foetuses in the same family. I have also met with polydactyly in several generations, and in several individuals in the same generation. One very interesting history I may give here. It was that of a woman showing a

¹ *Diseases and Deformities of the Foetus*, 1892-95, vols. i and ii.

defective development of the muscles of one thumb; her first child had hydrocephalus and absence of one thumb, and her second foetus was anencephalic and had one thumb represented by a formless mass of skin-covered adipose tissue. Further; nothing is better known in the artificial production of monstrosities than the individuality of the germ, for no matter how strongly teratogenic the agency may be (*e.g.*, hydrocyanic acid), some organisms will escape its action and develop normally. I might extend and apply these observations to germinal life, and refer to the heredity of twin-bearing, and so forth, but I must draw this already too long address to a close. Suffice it to say, that it is evident that in addition to morbid causes coming from without, we have to deal constantly with hereditary tendencies for or against pathological developments existing already in the organism. This is true of the pathology of all periods of life, ante-natal as well as post-natal; and the nett result is the health or disease, deformity or malformation, of the individual.

In a tabular form some of the chief conclusions which have emerged from this manner of regarding ante-natal pathology may now be given:—



In this communication I have refrained from touching upon any of the aspects of ante-natal pathology save those of its etiology. I have said nothing of the means of diagnosis of monstrosities and foetal disease before birth, although noteworthy advances have to be recorded in this relation; I have passed over the symptomatology and clinical history of such cases, and have referred not at all to their obstetric aspects; the prophylactic treatment of ante-natal malformations has been left unconsidered, as have also their medico-legal bearings. Nevertheless, all these aspects of the subject present problems of high interest; and with some of these I hope to deal in a series of six lectures to be delivered next session within the University of Edinburgh.

Gentlemen, I have tried to play the rôle of a guide, albeit a very inefficient one, in revealing to you some of the little known departments of ante-natal pathology. I have this qualification, at least, that I know some of the difficulties of the way, and some of the obstacles to be overcome. At best, I have given you but a glimpse of certain parts of the subject, and have through ignorance or imperfect acquaintance with other parts had to keep silent; but if I have succeeded in rendering any portion more interesting or attractive, or in establishing ante-natal pathology in its rightful place, as a branch of general pathology, I shall have achieved a very large measure of the success I have hoped for. I have, in conclusion, to thank you heartily for the high honour you have paid me in inviting me to give this address.

CASE OF SPASTIC PARAPLEGIA IN A BOY WITH A PECULIAR GAIT, AND PROBABLY DUE TO A PROGRESSIVE MYOPATHY.¹

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I HAVE ventured to call the affection from which this boy is suffering spastic paraplegia, although I am by no means sure that it fulfils the requirements of the clinical condition ordinarily designated by this term. While the rigid condition of his lower limbs, and his stiff, deliberate, and very peculiar manner of walk are suggestive of a spastic paraplegia, the entire absence of knee-jerks and ankle clonus, and the tendency to deformities of the feet and trunk, rather indicate that the site of the disease may be primarily in the muscles themselves. Of the peculiarities of the case, however, you will be in a better position to judge after I have related the clinical history and shown you the patient.

The lad is a message-boy, aged 15 years. Three years ago he first complained of a pain and stiffness in the left knee-joint, which interfered with his walking properly. For the next two years the difficulty of locomotion went on increasing, occasional attacks of pain in the left knee-joint being also experienced. About a year ago he first observed a deformity

¹ Read at a meeting of the Glasgow Medico-Chirurgical Society held on 6th December, 1897.

occurring in the left foot—in fact, the development of a condition of talipes equino-varus. During the three years that his power of walking has been interfered with, he has frequently suffered from headaches; and he attributes his illness in the first instance to cold contracted while going about a great deal with his bare feet.

As regards his previous history, the following points are of some importance. At the age of 5 years he suffered from "croup and diphtheria," for which he was treated in the Sick Children's Hospital, where tracheotomy was performed. No paralysis followed this attack. He has also suffered from chicken-pox and other infectious maladies.

The family history throws no light upon the case. His father is alive and well. His mother has developed a tubercular disease of the knee-joint during the last six months. Three sisters and one brother younger than the patient are in good health. Three of the family died in early infancy.

This is the second time that the lad has been under my care, he having been admitted to Ward 7 for the first time on the 24th July, 1896. During a residence of several months at this time, the following observations as to his condition were put upon record:—His walking was peculiar. In progression he swung the legs outwards and forwards, as if in addition to the need for carrying the limbs forward there was also a necessity to overcome a spastic tendency to adduction of the thighs. He brought his heels to the ground first, but not with any undue force. Both in standing and walking he required to dispose his feet in such a way as to secure a broad base. No patellar reflex or ankle clonus could be made out; the superficial reflexes were normal. There was marked stiffness of the lower extremities upon any attempt at passive motion; but he never experienced spontaneous spasmodic contractures of the lower limbs. No actual paralysis of the leg or thigh muscles, which were of good volume and consistence, could be made out. He was able to stand steadily with his feet close together, but when he did this his attitude was awkward, owing to his knees overlapping. If he attempted to stoop without bending his knees he fell forward upon his face. His general nutrition and development were good. He was and is very intelligent, and reads well. There was no facial paralysis or difficulty of speech. The senses of pain, touch, and temperature were quite normal. The organs of the chest and abdomen were healthy. The functions of the bladder and rectum have all along been normal.

In the month of September, 1896, it was noted that the

rigidity and hardness of the muscles of the lower limbs were more marked than before, and when he stood with his eyes closed he was noticed to sway slightly. There was no nystagmus, no squint, no diplopia. In walking he now held

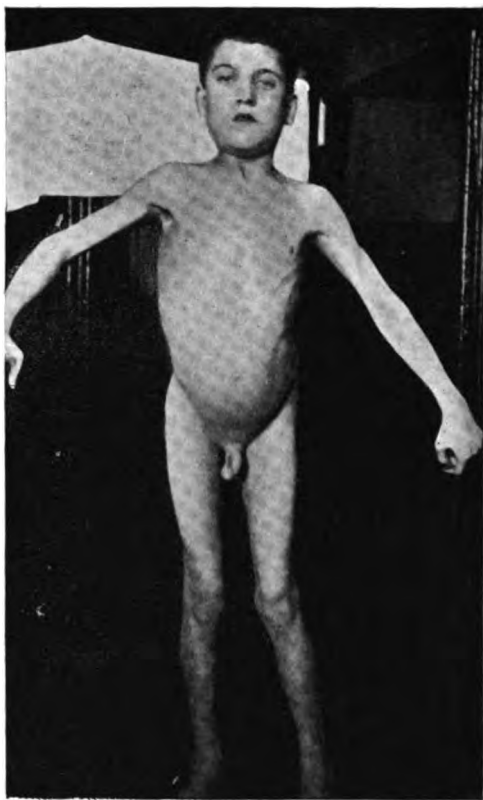


FIG. 1.

Shows attitude of boy on 6th March, 1893, when he attempted to stand with his legs tolerably close together. The position of the arms shown in the photograph gives a good idea of the manner in which they were held during walking, ready to grasp any object capable of giving support. Without support it was practically impossible for him to stand in the position photographed. (*Photo. by Mr. John Garraway.*)

his arms out from the body, partly to balance himself, partly to be ready to clutch any object suitable for support. The manner of holding the arms suggested an attitude seen in some cases of disseminated sclerosis. It was also observed that there seemed to be a very slight degree of inco-ordination of the upper

limbs, although this did not interfere with his writing very well. Very definite high arching of the instep was at this time noted, so that sometimes he seemed to be walking only on the heel and the toes.



FIG. 2.

Shows marked lordosis, and the necessity for support in standing (6th March, 1896).
(Photo. by Mr. John Garraway.)

In October, 1896, while at the Convalescent Home, he suffered from an attack of pain and swelling in the left knee-joint, which, however, soon passed off, leaving the other phenomena as recorded.

The boy was readmitted on the 28th October, 1897. His

difficulty of walking was very greatly increased. In moving about it was necessary for him to lay hold of any object within reach capable of supporting him as he laboriously dragged his limbs along. By a swinging motion of the body he dragged the legs forward, carrying them well out from the trunk, so that he occasionally had the appearance of attempting to take a very long step. The toes reached the ground first, and he often landed on their dorsal aspect so that they became doubled up under the foot. The left leg, as has been the case all along, was still the worst. The muscles of the legs showed no atrophy, and were firm and rigid. The foot could not be passively flexed upon the leg beyond a right angle. No ankle clonus and no patellar tendon reflex could be elicited. These features of the case are still well seen when I ask the boy to walk across the room; in addition, certain deformities have become developed. There is a marked condition of talipes equino-varus of the left foot. Lordosis is now very pronounced, as well as a degree of lateral curvature of the spine, the convexity being towards the right (Figs. 1 and 2, pp. 260 and 261). Dr. T. K. Monro has made a very careful investigation of the state of the cranial nerves, of which his summary is as follows:—"There is slight nystagmus, only noticed on extreme deviation of the eyes. The right pupil is very slightly larger than the left, otherwise everything is normal."¹

There is no atrophy of the muscles of the arms, and the slight inco-ordination previously noted has not become worse. No fibrillary tremors have at any time been observed.

The case is in many respects peculiar, and I have had considerable difficulty in arriving at an opinion as to its true

¹ Detailed note of the condition of the cranial nerves by Dr. T. K. Monro:—

9th to 11th November, 1897.—I. Smell preserved.

II. O.E. (both eyes alike).—Discs not very well defined but quite healthy. Some fibre bundles extend along some of the vessels from the discs. Remaining parts of fundi normal. V.A. = $\frac{1}{3}$ in each eye.

III, IV, and VI. There is no external ocular palsy, and patient never has diplopia. There are slight horizontal nystagmoid movements of the eyeballs when these are rotated far from the mid-position; but spontaneous nystagmus is not observed.

Pupils.—The left pupil is medium-sized, the right very slightly larger. Each contracts directly and consensually to light, and contracts when the visual axes converge in attempts at accommodation. Accommodation itself is good. Each pupil appears to dilate on stimulation of the skin of the neck; but a little doubt is introduced by the free spontaneous movements or unrest of the pupil.

Motor.—The masticatory muscles are strong—the masseter, temporal, external and internal pterygoids being all ascertained to act on both sides.

nature. Three conditions presented themselves to me for consideration:—

1. Infantile spastic paraplegia due to degenerative lesions or defective development of the lateral columns of the spinal cord. The entire absence of the knee-jerks and of ankle clonus, as well as of any tendency to spasm of the legs, soon led me to set this consideration aside.

2. Friedreich's hereditary ataxy was next taken into account. The age of the patient and the absence of the deep reflexes were, on the whole, in favour of this view as to the nature of the complaint. It soon became so evident that the difficulty of locomotion was due to a muscular disability rather than to a disorder of co-ordination that this diagnosis was also departed from.

3. A progressive muscular dystrophy or myopathy seems to me to be the only diagnosis left. In children there are chiefly two varieties of this disorder met with—viz., pseudo-hypertrophic paralysis and simple idiopathic muscular atrophy; the latter form, however, according to Gowers, rarely begins in early childhood. Of neither of these forms can the present case be regarded as a perfectly typical example. Of pseudo-hypertrophic paralysis I have now seen several examples of a characteristic kind, and certainly this boy has never struck me as being at all like them. The absence of a family tendency so far as we can ascertain, the commencement of the disease in the left lower limb, in which the disability has all along been most marked, and the mode of walking, all seem to me to place the case in a category different from that of ordinary Duchenne's paralysis. That it is not an ordinary case of simple idiopathic muscular atrophy, either of the "juvenile" or "facio-scapulo-humeral type," the definite absence of any

Sensory.—There is no pain, and no defect of sensation (finger-touch, contact of pin-point, heat, and cold) in the face.

Taste is preserved in (i) palate and fauces, (ii) posterior part of tongue, and (iii) anterior part of tongue.

VII. Facial muscles are normal.

VIII. Hearing, so far as can be tested in a noisy ward, is well preserved. Rinne's experiment positive on each side.

IX, X, and XI (medullary portion). There is no evidence of disturbance of the functions of these nerves. Respiration (taken every three hours for the past two days) has varied from 16 to 24, and the pulse from 74 to 100. The temperature during the same time has been 97·6° to 99·2°. The soft palate is actively moved. There is no coughing, choking, or difficulty in deglutition.

XI (spinal portion). Sterno-mastoids and trapezii strong.

XII. Tongue normal.

Summary.—Slight nystagmus, only on extreme deviation of the eyes. Right pupil very slightly larger than left. Otherwise everything normal.

distinct wasting of the muscles seems to indicate. The marked muscular disability, the absence of the deep reflexes, the acquired talipes equinus, and the gradual development of lordosis and lateral curvature of the spine, with the unimpaired sensory and intellectual faculties, all seem to indicate the propriety of classing the case as an undefined member of the general group of muscular dystrophies.

Last session, along with Dr. Monro, I presented a series of cases of muscular atrophy to the Society, an account of which will be found in vol. i of the *Transactions* at p. 249. With Case 3 of this group the present one might with profit be compared, although in many respects they seem to be essentially different in clinical details.

The lad has been treated by tonics, massage, and electricity, without material change in his condition.

CURRENT TOPICS.

THE CHAIR OF MEDICAL JURISPRUDENCE AND PUBLIC HEALTH IN THE UNIVERSITY OF GLASGOW.—The Queen, on the recommendation of the Secretary for Scotland, has been pleased to appoint Dr. John Glaister, Professor of Medical Jurisprudence in St. Mungo's College, to the corresponding chair in the University, rendered vacant by the resignation of Professor Simpson. The appointment has given general satisfaction in the profession, who recognise in it the natural outcome and reward of the long years of study and teaching which Dr. Glaister has devoted to subjects embraced within the scope of the chair.

THE DEGREE OF LL.D. FOR MR. ALEXANDER DUNCAN, B.A., SECRETARY OF THE FACULTY OF PHYSICIANS AND SURGEONS, GLASGOW.—The announcement by the Senate of their determination to confer this honorary degree upon the cultured Secretary of the Faculty has everywhere elicited the liveliest manifestations of satisfaction. Mr. Duncan's contributions to the medical history of Glasgow and the West of Scotland are literary productions of the highest merit, and his Catalogue of the Faculty's Library is a monumental work, which will be

of service to Fellows for many generations to come. In conferring this degree, the Senate have reflected honour upon themselves by adding to their list of graduates one of the most scholarly of the citizens of Glasgow.

BRITISH MEDICAL ASSOCIATION: GLASGOW AND WEST OF SCOTLAND BRANCH.—The winter meeting of the Branch was held on Thursday, 24th February, in the Western Infirmary, when nearly one hundred members were present. The following was the programme of proceedings:—

1. *Business Meeting.*—*Inter alia*, the Secretaries reported a large addition to the membership of the Branch, and a very satisfactory condition of the funds. Dr. Frew, of Kilmarnock, was elected President-elect, and Dr. Black, of Greenock, one of the Councillors, in place of Dr. Freeland Fergus, who becomes President, and Dr. Shearer, of Paisley, who, under the bye-laws, retires from the Council. Dr. Freeland Fergus was elected a second Representative of the Branch on the Council of the Association to represent the Branch at the Council meetings in London. This election was made in view of the large additions to the membership of the Branch which have lately been taking place. Dr. Bruce Goff, of Bothwell, who up to this time has alone represented the Branch on the Council, was also unanimously re-elected. The following matters were then dealt with by the meeting:—(a) Scottish Poor Law Medical Officers' Tenure of Office; (b) Legislation for Inebriates; (c) Report of Constitution Committee of parent Association; (d) Alteration in Bye-Laws of the Branch.

2. *Demonstration* of cases of interest by members of the staff of the Infirmary.

3. *Inspection* of the New Operating Theatres and of the New Pathological Institute in the Infirmary.

In the evening, the members of the Branch, to the number of one hundred, dined together, and entertained, as the guest of the evening, Professor Sir William T. Gairdner, K.C.B.

FRENCH CONGRESS OF OBSTETRICS, GYNÆCOLOGY, AND PEDIATRICS.—The second session of this Congress will meet in Marseilles from the 8th to the 15th October next, under the presidency of Professors Pinard, Pozzy, and Broca, of the University of Paris. Names of those wishing to participate should be sent to Professor Queirel, General Secretary, 20 Rue Grignan, Marseilles.

MEETINGS OF SOCIETIES.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.

SESSION 1897-98.

MEETING IV.—6TH DECEMBER, 1897.

The President, DR. G. S. MIDDLETON, in the Chair.

I.—CASE OF "MALADIE DES TICS."

BY DR. W. R. JACK.

Dr. W. R. Jack showed a case of the *maladie des tics*, on which he read the following notes:—

The case which I wish to demonstrate to you to-night is an example of a condition not in itself excessively rare, but in connection with which little has been written in England. It belongs to the class of cases known in this country as "habit-spasm," and the reason why I have chosen the French name for the disease in the title of my paper is that it differs in some important respects from habit-spasm as usually described. *Maladie des tics* is a name used in France and Germany to indicate a distinct and special group of symptoms, of which convulsive tic is only one, and usually the earliest. The disease so designated has a more or less definite etiology, definite symptoms, and a definite mode of progress. Its main symptoms are these:—Involuntary movements of one muscle or muscle-group, or of several; involuntary exclamations or ejaculations; coprolalia, or the involuntary use of disgusting or obscene words; echolalia and echokinesis, or the involuntary repetition of words spoken, or gestures made, by others; and "fixed ideas," the domination of the intellect by one special thought, recognised by the patient to be unhealthy, and so to be distinguished from the fixed ideas of the insane. The disease is progressive, as a rule, but the progress is slow, and may be arrested at any point for years, or even for life. The term "habit-spasm," on the other hand, as used by Gowers and others, connotes none of these latter symptoms, and the expression "convulsive tic," as used in this country, indicates, as a rule, merely a primary spasm of the muscles supplied by the facial nerve. With these preliminary remarks, I may read you the history of this case, and then introduce the patient.

N. K., a boy of 16, was admitted to Dr. Middleton's wards on 14th October, complaining of jerking movements of the head and arms of four years' duration.

His family history is good, no tendency to nervous affections being discoverable. His father and mother are healthy, and spring from healthy families. They had thirteen children, of whom six died in infancy. The remaining six are healthy. His friends state that the onset of the present illness was due to a fright. During a thunderstorm he was chased by a man from under a tree where he was standing, and came home in a state of terror. He was noticed to be "shivering" a good deal that night. But his father, in a subsequent interview, states that the illness preceded this fright by several weeks, and followed a fall on the back of his head, which he got while fighting with another boy. This gave rise to a transitory swelling, and confined him to bed for a few days. There was no headache, but he vomited several times during the first day or two, after which the vomiting ceased. About a fortnight or three weeks after the fall, slight twitching of the eyelids and movements of the head were noted. These gradually increased in severity, and became associated with similar jerking movements of the arms and shoulders, and also of the facial muscles. Seven months ago some improvement was noted in the condition of the arms, but not in other parts. When his father watched or cautioned him, the movements were less marked, but whenever observation was withdrawn, they became so much the more violent for the previous attempt at control. No pain accompanied them. Excitement increased their intensity, and they were evidently worse when he was with other boys. Although his sleep is restless, and he sometimes moans a good deal during the night, the spastic movements are arrested by sleep. They do not at all interfere with voluntary actions. Speech and deglutition are unaffected. There has been no impairment of intelligence, nor of the organs of special sense. The pupils respond normally to stimuli, and nystagnus is absent. He has had no headache, sickness, or vomiting, save in the first few days. There is no anæsthesia, paralysis, or paresis. Ataxia is absent, although the knee-jerks cannot be elicited. The bladder and rectum are perfectly controlled.

When I first saw him, as he lay in bed, he would remain perfectly quiet for a short space of time, when suddenly the head would be jerked smartly backwards several times in succession, the movements being clonic, but without any regular rhythm. At other times the head might be brought

forwards or inclined to the side. Spastic movements of the eyelids and of the zygomatici were also present, and a peculiar ejaculatory sound was noted in connection with the spasm of the mouth. The arms and hands were also the seat of spastic movements, and to a less degree the legs.

[The patient was here introduced, and it was shown that the spastic movements did not in any way interfere with voluntary movements. He could write, take his food, and walk in a perfectly normal manner. The movements were shown to be distinct from those of chorea, as the tongue could be held out quite quietly, and the food could be carried to the mouth, or objects held in the hand, with no tremor or jerking movements.]

With this case I wish to contrast the second, who is the subject of convulsive tic, as understood in England. I saw her yesterday for the first time, and was unable to do more than make a brief examination. The note of her history which follows concerns, therefore, only her present illness:—

Mrs. C., æt. 59, was sent from the Royal Infirmary Dispensary to see Dr. Middleton on 11th November, on account of a facial spasm of two years' duration. She attributes it to a blow above the right eyebrow, giving rise to swelling, a few days after which the eye began to wink.

She is now the subject of marked blepharospasm, but there is also very distinct twitching of the right facial muscles, which occurs, according to her statement, about once in every quarter of an hour. It gives rise to marked contortion of the face, and, though usually clonic, sometimes becomes almost tonic. Under excitement it gets worse, and a cold air blowing upon the face will also set it up. It ceases during sleep. There is no interference with speech or deglutition. The tongue, when protruded during an attack, is deflected to the right side, but not in the intervals. There is no paralysis of the palate. Hearing and sight are unaffected. Nystagmus is absent. There has been no loss of power in the arms or legs, but she experiences a feeling of weakness in them. She suffers from left frontal headache, worse during the attack, and from giddiness. She states that the eye became affected some time before the mouth, and that in the last twelve months the symptoms have increased in severity. I am given to understand that the great organs of the body are unaffected.

[The patient was here introduced to the meeting.]

The two patients present, as you will see, many points of

contrast. In the one the onset of the malady dates from the age of 12, in the other from that of 57. In the one the spasm of the face is bilateral, in the other unilateral. In the one the spasm is more or less generalised, in the other it is confined to the domain of a single nerve. And in the case of the *maladie des tics*, you have the peculiar ejaculatory sound which is absent in the other.

It is to Gilles de la Tourette, in a paper written in 1885, which I regret that I have not been able to find, that we owe the first definite description of this malady, and to another Frenchman, Guinon, whose papers may be found in the *Dictionnaire Encyclopédique des Sciences Médicales*, 1887, and in the *Revue de Médecine*, 1886 and 1887, a complete account of its various symptoms. The subject has also attracted the attention of German writers, among others Jolly, in the *Charité-Annalen* of Berlin, and for a brief but graphic description I may mention Oppenheim, in his *Text-Book of Nervous Diseases*, 1894.

In the time at my disposal I can give you but a brief account of the symptoms and the progress of the disease. It begins, as a rule, in childhood, as do the "habit-spasms" of English writers, but it is to be distinguished from them in this, that while, according to Gowers, habit-spasm tends to recovery within a few months or years, the *maladie des tics* tends to ingravescence. Convulsive tic, by which I mean a primary spasm occurring in the area of the facial nerve, is a disease of later life. The earliest symptom of the malady is generally a simple tic, usually affecting the muscles of the face, and particularly the orbicularis palpebrarum. After a time, other tics become associated with the first; the muscles of the lips are involved, or those of the neck, causing such nutatory movements as were seen in this case. As the variety of the movements increases, so does the number of attacks. The spastic movements may spread to the arms, and much more seldom to the legs. There follow (I give them in the order which, according to Guinon, represents their relative frequency, but not necessarily in the order of incidence) involuntary exclamations and coprolalia, next the *idées fixes*, and last echolalia or echokinesis. In the earlier stages of the malady, and indeed throughout, the spastic affection, whether of the motor area or of the ideational, is to some extent under the control of the sufferer. By an effort of will, he can for a time restrain its manifestations. But he pays for his effort, both in an increased access of the spasm when it is finally relaxed, and in a feeling of oppression during its con-

tinuance. In the later stages, when those changes that must excite the observation of the most careless have become pronounced, despondency and even suicidal tendencies may make their appearance. Such cases, however, are in a small minority. The malady progresses slowly, and in many instances the graver symptoms do not appear. The order of their appearance is variable; fixed ideas, for instance, though usually a late, may be an early symptom. Patients labouring under this disease usually become increasingly irritable and excitable. As it progresses, although the intelligence is absolutely unimpaired, the power of concentrated attention is diminished or lost, so that in advanced cases a patient may even be unable to read, the effort to fix the attention at once leading to a violent access of spasms.

With regard to diagnosis, certain forms of hysterical spasms may closely simulate the *maladie des tics*, and in these cases one may also have involuntary ejaculations or even echolalia. But the presence of other hysterical stigmata, tenderness over one or more of the well-known points, localised anæsthesia or paralysis, or hemianæsthesia, and the contraction of the visual fields, will dispel confusion.

Chorea, again, presents a certain similarity. But the movements of tic do not interfere with voluntary acts. You have seen that this boy can hold his tongue out steadily for some time, he writes without a tremor, he carries his food to his mouth and never past it, and so on. The disease known as electric chorea, or Dubini's disease, besides being chiefly confined to Lombardy, is of relatively short duration, and almost invariably fatal. It is also attended with wasting. Hemichorea and athetosis can be at once excluded, and in organic affections, central or peripheral, involving a nerve supplying the face or neck, the symptoms are uniform.

The prognosis *quoad vitam* is, of course, good, except in the later stages, when mental despondency may give rise to suicidal tendencies. But not much hope of recovery can be held out. There may be recessions of the affection, lasting for a considerable time, but they are usually followed by a further development of the disease.

The most prominent factor in the etiology is heredity, not direct, but of a general nervous instability. Insanity is frequently to be discovered in the family history. The onset of the affection is very often attributed to a shock or fright, and sometimes to a blow. In the case before us, careful inquiry into the family history has failed to elicit any evidence of a neuropathic tendency.

The malady has no pathology, in the sense of any recognisable structural change. Guinon points out that the malady is due to the loss of the inhibitory power of the will, and that the fixed idea is to be regarded as a spasm of ideation, comparable to the muscular spasm. It is probably to be explained by a loss of connection in the various association fibres. Impulses no longer travel to the ideational centre except along one route; and similarly with the motor centre, the inhibitory association fibres are thrown out of connection. Echolalia he explains by supposing that the ideational centre being inactive, auditory suggestion is transmitted direct to the motor centre as if along a reflex arc, and so in echokinesis, where the path is directly from the visual to the motor centre.

In conclusion, the treatment of such cases is not hopeful. It is important that as little attention as possible should be paid to them. Drugs have little or no effect upon the condition, although where the paroxysms are very violent, a large dose of chloral may procure some hours of rest. The application of electricity is not of much avail, but Oppenheim has seen improvement under a mild course of hydrotherapy, and he lays stress upon the isolation of the patient.

Dr. Alex. Robertson said that the spasm of the muscles of the neck was somewhat similar to that of spasmodic torticollis, but in these cases the spasm was not so widely diffused. The repetition of words, and the fixed ideas, which had been described, were interesting, as tending to connect the condition with insanity. The discussion at Moscow had shown a considerable variety of view on the subject of the *idée fixe*, but, in view of the multiplicity of nerve connections, there was no need to be at a loss for a theory. The inhibition theory did not seem to him entirely satisfactory. He was accustomed, when a portion of the nervous system was thrown out of action, to compare it with the result of disconnecting part of a large system of machinery, the other parts of which might continue their work in a perfectly regular fashion.

Dr. J. Lindsay Steven recalled the case of a man whom he used to see upon the street, stopping every now and then to measure or to touch objects lying upon the pavement, such as pieces of paper, and so on.

Dr. Wallace Anderson also remembered the man, but stated that he was insane. The pathology of the condition was hypothetical, but he thought it less a want of inhibition than an auto-stimulus. The action of the bromides in epilepsy would seem to point to their usefulness in these cases.

Dr. T. K. Monro asked if there were any further distinctions between this condition and habit-spasm. He had seen cases of the latter which had persisted. He remembered one in which there was improvement under mixed bromides.

Dr. Dun was surprised that *Dr. Robertson* had not seen more cases in asylums. Habit-spasm was not so hopeless as had been suggested. He remembered two similar cases in a mother and son, in both of which recovery took place.

Dr. Middleton pointed out that the case had been sent into his wards as one of chorea.

Dr. Jack replied.

II.—CASE OF SPASTIC PARAPLEGIA IN A BOY WITH A PECULIAR GAIT, AND PROBABLY DUE TO A PROGRESSIVE MYOPATHY.

By *DR. J. LINDSAY STEVEN.*

Dr. J. Lindsay Steven's paper appears as an original article at p. 258.

III.—CASE OF TOXÆMIC JAUNDICE.

By *DR. J. LINDSAY STEVEN.*

Dr. J. Lindsay Steven read the history and showed specimens from a case of toxæmic jaundice.

The details of this case, which was of interest as affording a clinical illustration of a true toxæmic jaundice without obstruction, except in the finer bile-ducts within the liver itself, will be published at a future date. During life the patient presented many of the features of acute yellow atrophy of the liver, and the whole duration of the disease was two or three weeks. Microscopic sections of the liver, prepared by *Dr. Walter K. Hunter*, were shown, which clearly demonstrated the blocking up of many of the capillary bile-ducts by inspissated bile. There were also numerous small circular ulcers in the colon.

Dr. Middleton, in discussing the first case, said that he had in his wards two cases somewhat resembling this. The one was a case of *Friedreich's* disease; the other, in which the atrophy was similar to that in this case, was undoubtedly a muscular dystrophy. This case was probably of the same nature, and had arisen from some congenital defect not manifested for some years after birth.

Dr. Robertson said that the case did not correspond with

any example of Friedreich's disease that he had seen. He did not know that any more reasonable view than Dr. Middleton's could be entertained.

Dr. W. K. Hunter, on the second subject, remarked that the case was of interest on account of its seeming connection with pernicious anæmia, but on staining for iron in the liver no deposit of free pigment could be found. If any iron were present, it must have been intimately bound up in the crystalline form. If toxæmic jaundice and pernicious anæmia were both due to poisons absorbed from the alimentary tract and passing into the portal circulation, then these poisons must have different actions, for in this case there was no liberation of iron albuminate.

Dr. Middleton was surprised that there had been no head symptoms, as these were very common in such cases. The case would throw light upon the obscure forms of non-obstructive jaundice.

GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY.

SESSION 1897-98.

MEETING IV.—7TH FEBRUARY, 1898.

The President, DR. DONALD FRASER, in the Chair.

I.—SPECIMENS.

A. BY DR. R. M. BUCHANAN.

1. Dr. R. M. Buchanan showed specimens of the larvæ of *anthomyia canicularis*. The occurrence of the larvæ in the human subject appeared to be rare, judging from the limited number of cases reported. They were credited with the production of serious symptoms, such as those of cholera in some cases, while in other cases their presence had caused little or no discomfort. These differences appeared to depend largely on the length of time the bowel remained infested by the parasites.

The anthomyiæ constituted an exceedingly numerous family of dipterous insects, numbering over two hundred species in Europe alone. They were all more or less unsavoury in their

habits, inasmuch as they deposited their eggs in rotten vegetables, manure, or excrement, and underwent transformation in these media. On the other hand, when they reached maturity, they were characterised by extremely delicate and beautiful forms, and by their habit of frequenting flowers—a fact which found expression in the generic name. The larva of *anthomyia canicularis* was recognised by its maggot-like form, by the plumose lateral and dorsal spines, and the two separated, stalked breathing tubes.

The larvæ shown had been fairly well preserved. They were passed by a man who was much troubled with thread worms. He found the larvæ in the stool on one occasion only, and being impressed by their uncommon form, he placed a few in a bottle. About eighteen months thereafter he sought treatment for the thread worms, and brought the larvæ with him. He was an engineer, aged 36, of intemperate habits. While under the influence of alcohol he would eat all manner of uncooked foods, and especially flesh and vegetables. Sometimes the latter would be eaten by him when quite stale or decomposing. There were no symptoms which could be ascribed to the presence of the larvæ in the intestine.

With regard to the mode of entrance of this parasite into the intestine, some doubt still existed. It was generally believed that it entered the alimentary tract along with some article of diet, but it was also contended that the eggs might be deposited by the fly on the everted mucous membrane of the bowel when the individual was at stool.

In the present case the clinical history seemed to indicate very strongly that it reached the intestine indirectly by the use of vegetables in which there is reason to suppose the female *anthomyiæ* had deposited their eggs. It was to be noted, however, that the chance of ingress *per rectum* had also to be considered, since the patient followed his occupation frequently in rural districts. Such a mode of ingress was extremely improbable as an accidental circumstance, and it could hardly be regarded as a possibility in view of the physiological requirements of dipterous larvæ.

Dr. Finlayson referred to the exhibition of similar specimens which he showed the Society in 1889, fully reported in the Society's *Transactions*, vol. iii, p. 155, and in the *British Medical Journal*, 8th June, 1889. The larvæ in his case were passed in great numbers and alive. They were seen to swim about in the liquid motion. He regretted that the larvæ had

not been kept alive and hatched. The dead larvæ were submitted to a medical friend in Norfolk, who regarded them as belonging to the group anthomyia, and either anthomyia canicularis or anthomyia scalaris. It was he who suggested to Dr. Finlayson their mode of ingress into the intestine *per anum*. Introduction by the mouth seemed the more probable explanation in Dr. Buchanan's case.

2. Dr. R. M. Buchanan showed specimens of the acarus folliculorum, and directed attention to its apparently intimate relation to a skin disease—"seborrhœa corporis"—in a child.

The patient, Robert T., æt. 1 year and 7 months, was brought to the Dispensary of the Royal Hospital for Sick Children in December last on account of an eruption in the form of circular patches on the right breast, right cheek, right side of neck, left side of neck, and left temporal region. The patches were dry, finely scaling, reddish, and surrounded by a zone of prominent black follicles. They appeared to itch considerably at times. A certain superficial resemblance to ringworm suggested the propriety of examining for trichophytina. Several hairs were removed from the patch on the temporal region with ease and without causing the least pain. Under the microscope these presented numbers of the acarus folliculorum, and not a trace of the ringworm fungus. The other patches in the smoother parts were then examined, and the acari were easily found, though not so abundantly. They were also to be found in the enlarged black follicles surrounding the patches, but not in the follicles of the intervening healthy skin.

Under treatment with a sulphur ointment, and subsequently a carbolic acid lotion, the parasites entirely disappeared; the rash had ceased to spread, and in some manner had subsided.

In these circumstances Dr. Buchanan was led to suspect that a very direct relationship might exist between this parasite and the disease in question. It was not possible, however, with such limited observation, to make any definite statement.

It was generally stated in text-books that the acarus folliculorum had no injurious effect on man, but this was a statement one found it difficult to accept in view of the diseases which it produced in some of the lower animals. In dogs it produced a very definite lesion in the form of a follicular eruption, constituting a variety of mange, and in cattle it formed pits which nearly penetrated the skin.

B. BY MR. MAYLARD.

Mr. Maylard showed a specimen of adherent coils of intestine from a case of strangulated hernia.

The specimen was removed *post-mortem* from a patient who died of an attack of acute bronchitis five days after operation for strangulated inguinal hernia.

The man, aged 64, had suffered for twenty-six years from a rupture in the right inguinal region. At an early period he was always able to easily reduce it, but latterly he had much difficulty. Within the last few months it sometimes took him about two hours before he could effect reduction. He had always worn a truss. Symptoms of strangulation set in about five days previous to his admission to the infirmary. At the operation for relief of the strangulation, loops of intestine were found so intimately matted together by firm adhesions that reduction was not possible with a tolerably free division of the ring upwards and through the abdominal parietes. On the day following the operation he commenced to cough, and soon showed symptoms of an acute attack of bronchitis. From this he died four days later. His bowels had moved, and no trouble apparently existed connected directly with the operation.

An examination of the specimen shows it to consist of a loop of small intestine which has become doubled upon itself some three or four times. These reduplications are firmly bound together by tough fibrous adhesions which prevent any separation of the parts.

Mr. Maylard briefly referred to another somewhat similar case where a loop of small intestine had become so acutely bent upon itself and matted together as to cause internal strangulation and acute intestinal obstruction. In this instance, the patient, a woman, aged 45, had suffered for two years from an umbilical hernia. It first appeared one day while washing. She was seized with vomiting which lasted for a couple of days, and ceased on the partial disappearance of the tumour. Since this first attack she had had several similar ones, rarely going for longer than a fortnight or three weeks without a seizure. She always noticed during these attacks that the lump became hard, and her bowels did not move. As soon, however, as the swelling became soft again all her symptoms subsided. She was admitted to the infirmary seven days after the commencement of her present attack, with advanced symptoms of acute intestinal obstruction. Operation was

performed, but death resulted within twenty-four hours from gradually increasing collapse.

The loop of small intestine which had become acutely doubled upon itself measured about 6 inches in length, and while intimately matted together by firm fibrous adhesions, presented at the neck of the loop a well-defined collar of fibrous tissue which appeared to strangulate the bowel as with a ring.¹

Mr. Maylard remarked that in both these cases he thought the adhesions found were due to the local peritonitis set up by the prolonged endeavours and frequent difficulty in reducing the hernia. In the second case, that of the woman, the history showed that there had been frequent attacks of temporary strangulation, and these would be only too likely to cause some peritoneal inflammation of the engaged loop. He thought the teaching of these cases was that old herniæ and herniæ which had at times been inflamed or partially strangulated might be expected to manifest at operation signs of adhesions and matting together of coils of intestine; and, further, that wherever possible, coils found so matted together should be disengaged in order to prevent any future likelihood of internal strangulation, kinking, or any other causes which might lead to acute intestinal obstruction.

C. BY DR. WORKMAN.

Dr. Workman showed and described the following specimens:—

1. *A sarcoma from the neighbourhood of the pancreas, with secondary disease of the liver.*

Abstract of Clinical History.—A. H., æt. 4, admitted to the Royal Infirmary under the care of Dr. D. C. M'Vail, on 4th January, 1898.

Moderate jaundice of eleven weeks' duration, during which time motions had been white and urine dark. Pain in epigastric region a fortnight before jaundice. A motion this morning, as far as can be judged, without bile. Great emaciation. An alcoholic history of three months' duration, and suspicion of one before, the mother giving it to the child, who became fond of it.

Liver greatly enlarged, extends to within three-quarters of an inch of superior iliac spine, from that curves upwards to slightly above umbilicus, and then up to anterior end of eighth

¹ A more detailed record of this case will be found in the *British Medical Journal*, 1898, vol. i, p. 428.

rib. Liver feels dense; no nodulated parts made out. Moderate tenderness. No evidence of peritonitis. No ascites and no oedema.

Spleen, somewhat enlarged, extends from eighth rib to under border of the eleventh; measures $3\frac{1}{2}$ inches transversely, $3\frac{1}{4}$ inches as made out to percussion.

Cervical glands as large as small shot. None made out elsewhere. No heart murmur. Slight ecchymosis in left upper eyelid, said not to be due to a blow. No specific history. No old-standing suppuration.

Blood: hæmoglobin, 15 per cent.; corpuscles, 2,400,000. All cells nucleated; kidney and pear-shaped cells also present. Many of the blood cells contain bodies resembling bacilli. No tenderness of bone made out. Owing to urine being lost no account of the condition obtained. Appetite good. No skin irritation. Slight enlargement of abdominal veins. Inclined to sleep at times very much. Mentally quite clear.

The child gradually sank, and died six days after admission.

Post-mortem Examination.—The body was that of a greatly emaciated boy with very great distension of abdomen. Permission was only given to open abdominal cavity. The thoracic organs were removed by this means, and presented very healthy characters.

Lungs appeared healthy and fairly voluminous.

The liver, stomach, and all the abdominal organs were removed in a mass, being so matted together in a tumour formation that it was difficult to examine them in any other way.

The stomach contained mostly semi-fluid and fluid food material of a white and yellowish colour. Its mucous membrane presented healthy characters; the posterior wall was bound to a large irregular tumour mass, the size of a newborn child's head, which took the position of the pancreas and root of the mesentery, the lymphatic glands of which were much enlarged. On laying open the duodenum it was seen to contain bile-stained material. The contents of the intestine down to the middle of the ileum were also somewhat bile-stained, but below this they became white like very light-coloured whipped cream, the creamlike material filling the somewhat collapsed colon. The gall-bladder was large, and contained dark fluid bile, which easily escaped through the papilla into the duodenum.

The liver was enormously enlarged, and was, for the most part, infiltrated with tumour formation, which was of a pale

colour, but into which numerous hæmorrhages had occurred, causing a mottled appearance. The tumour affected mostly the borders of the organ, which were greatly increased in size, giving a most remarkable frilled appearance to the organ when its under surface was turned up.

The spleen was somewhat congested, but otherwise presented nothing abnormal.

The kidneys were rather pale, and though they came into very close contact with the tumour, it did not seem to have invaded them. The suprarenal bodies also appeared healthy.

The bladder contained a considerable quantity of bile-stained urine, and was distended so as to reach above the brim of the pelvis.

Dr. Workman said that the tumour was preserved in formalin. The enlarged liver occupied the greater part of the abdominal cavity. As mentioned in the pathological report, the edge of the organ appeared as a great frill; the spigelian globe was one tumour mass. The tumour was bisected. By this means it was seen that the tumour mass took up the position of the pancreas. Dr. Workman was, however, strongly of opinion that the tumour had originated in a lymphatic gland, and was similar in structure to the mediastinal gland tumour—an alveolar sarcoma. Sections of the liver showed the central portions to be less infected than the peripheral. Infection had taken place through the portal vein; some of the sections showed veins with tumour cells. The general arrangement of the lobules in the tumour suggested pancreas, but no pancreatic structure could be found. Clinically the case was regarded as one of cirrhosis or malignant disease.

Dr. L. R. Sutherland was inclined to think that, in the absence of pancreas and of hæmorrhage, the tumour was of pancreatic origin. It might be one of those rare cases of primary sarcoma of the pancreas.

2. Masses of a straw-like character from the stomach and intestines of a girl—Death from intestinal perforation and peritonitis.

Abstract of Clinical History.—C. M'L., æt. 19, admitted to the Royal Infirmary, under the care of Dr. M'Vail, on the 30th November, 1897, having suffered for three weeks with moderate gastric symptoms. On examination by palpation, there was an apparent enlargement of the spleen, which

seemed to extend beyond the middle line for fully 2 inches, and downwards to within an inch of the umbilicus.

On the 27th December, decidedly less than an inch from umbilicus, the lower edge and right margin of the spleen are felt sharply. Considerable anæmia. Blood corpuscles, 3,800,000; hæmoglobin, 40 per cent. Patient was placed on milk diet. Diarrhœa present on second day, afterwards there was a tendency to constipation. On the 24th December she complained of general abdominal pain, and was prescribed opium and fomentations. In the right iliac fossa a hard mass was felt, cylindrical in shape, and fully 2 inches long and 1 inch broad, lying $1\frac{1}{2}$ inch above and parallel to Poupart's ligament. This region was more tender than any other part of abdomen. The mass was moderately movable in all directions. Temperature since admission generally normal; pulse, 80. Vomited twice on 26th December, once the day before. Bowels acted well, twice on the 26th.

On the 28th December, after an injection, a hard mass, supposed to be that observed in the right iliac fossa, was passed from the bowel.

Patient continued fairly well till the 7th January, 1898, when vomiting and pain returned; on that day the bowels acted after a dose of castor oil. After that time no motion of the bowels could be obtained, though injections were given several times.

The apparent splenic enlargement was reduced so that it could only be felt under the costal arch. No abnormality was felt elsewhere, but the whole small intestine frequently went into a condition of extreme contraction, ending in a gurgle felt chiefly in the region of the cæcum, but occasionally over transverse and descending colon. There was believed to be some obstruction in the neighbourhood of the cæcum. No evidence of peritonitis was observed. The patient died on the 12th January, 1898.

The *post-mortem* inspection was made on the 13th January, 1898.

The body was greatly emaciated; there was slight yellow discolouration of the skin over the abdomen. The right pupil was a little contracted, the left was medium in size. There were several warts on the back of the right hand. *Post-mortem* rigidity was passing off.

The thoracic organs presented remarkably healthy appearances, except that the heart was rather small and flaccid; its valves were quite healthy.

On opening the abdomen, it was found to contain a considerable quantity of pus, with some fluid yellow fæces, which had escaped from a small perforation of the ileum about 4 to 5 feet above the ileo-cæcal valve.

The peritoneum was injected and inflamed; the loops of intestine, however, were not very adherent, so that they could be readily separated.

The stomach was much distended with gas, and contained a mass of straw-like material $11\frac{1}{2}$ oz. in weight, and rolled into the shape of the stomach cavity. This had probably been formed gradually in the course of months or years by the patient having swallowed small quantities of the material from time to time, which had been compressed and kneaded together by the movements of the stomach into the mass discovered at the *post-mortem*.

The intestine was somewhat distended, but otherwise healthy down to the region of the perforation of the ileum, where the wall was found congested and gangrenous for about a foot. About 8 inches below this gangrenous part a second mass of straw-like substance similar to that in the stomach, about 6 inches long and $1\frac{1}{2}$ inch in diameter at the thickest part, and weighing almost 3 oz., was found. This mass had by its irritation in all probability caused the gangrene and perforation, and had afterwards slipped a little further down.

The spleen, liver, pancreas, and kidneys presented quite healthy characters, and the pelvic organs were also remarkably healthy.

The brain presented healthy characters.

Dr. Workman said that there was no indication during life of the existence of these straw-like masses, or of how they got there. Such a condition was not uncommon among insane people; in this case there was no evidence of insanity other than perhaps a slight religious mania.

In the Royal Infirmary Museum there are two somewhat similar specimens. In one the small intestine is seen blocked by a mass like a potato, but in structure granular and fibrous; the other specimen is a mass of thread about the size of the closed fist, which had been passed by the bowel. In the latter case there was an explanation—it was passed by a seamstress who had for some years been in the habit of swallowing small pieces of thread; there were no symptoms apart from those of chronic obstruction.

D. BY DR. JOSHUA FERGUSON.

Dr. Ferguson showed a specimen of cerebellar hæmorrhage from a case of sudden death.

Dr Ferguson stated that the clinical record of this case was incomplete, as the patient was not seen by any medical man until an hour or two before her death, and no information as to past history was obtainable from relatives. She was a young woman, æt. 24, well-nourished and of good physique. She was, however, anæmic. About 20th November, 1897, she began to complain of pain on the right side of the head, apparently definitely assigned to the mastoid and occipital region. She attributed the pain to diseased teeth, and as it tended to increase she visited a dentist on 8th December, and had five teeth removed, no anæsthetic being used. On the morning of 9th December she still complained of headache, but seemed otherwise to be fairly well; when, suddenly, about 9 A.M. she lost consciousness; signs of extreme respiratory collapse immediately presented themselves, and she died within three hours.

At the autopsy the head only was examined. The membranes and cerebrum appeared quite healthy. There was little fluid in the ventricles. The arteries of the base showed here and there an irregular yellow staining of the intima. In the bottom of the third ventricle a small quantity of coagulated blood was found, and a sub-pial extravasation of blood was traced back under the velum interpositum to the great transverse fissure, and thence over the upper surface of the cerebellum. On section of the cerebellum an extensive extravasation of blood was found, situated principally in the right lateral lobe, but extending through the middle lobe towards the left side, and distending the whole organ to a considerable extent. The middle lobe had thus been driven downwards over the floor of the fourth ventricle.

In the course of the right inferior cerebellar artery, at a point where it bifurcated, slightly above the posterior border of the cerebellum, an aneurysm was situated. Its size was that of a small hazel-nut. Its wall was extremely thin, and was composed wholly of the tunica adventitia. The wall had ruptured towards the cerebellum, and hæmorrhage to the extent described above had occurred. No embolus was found. The walls of the cerebellar arteries showed the same signs of fatty change as those of the base of the brain. No miliary

aneurysms were found. It might be noted that Hamilton¹ stated that cerebellar hæmorrhage not infrequently occurred in young women, and that it was due to a simple fatty degeneration of the small arteries and their capillaries. The present case was one of this type. The aneurysm was not a true dilatation of the vessel wall, but a "spurious" one of very recent development; its formation had merely furnished a respite from the fatal issue which the rupture precipitated.

II.—CASE OF ACUTE RHEUMATIC POLYARTHRITIS; DOUBLE PNEUMONIA; HYPERPYREXIA (TEMPERATURE, 107.4°); TREATMENT BY COOL BATHS, AND AFTERWARDS BY CONTINUOUS WARM BATH; RECOVERY; SLIGHT BILATERAL ULNAR NEURITIS.

By DR. T. K. MONRO.

The patient, a man, aged 30, came under my care in August, 1897, when I was acting for Dr. J. Lindsay Steven in the wards of the Royal Infirmary. After about a fortnight, he passed out of my hands, but I have Dr. Steven's kind permission to communicate the case to this Society. Patient was confined to bed for three weeks, at the age of 14, with "inflammation of the right lung." A few years ago he had a painful inflammation in his left eye, which was treated by atropine, and has left behind it a slight iritic adhesion. Otherwise his previous health has been good. The family history is unimportant. His work in the engine shop and foundry entails exposure to extremes of heat and cold. The present illness began late in the evening of the 19th August, and the pyrexia continued from the time of admission on the sixth day of illness, and presumably from the onset, until the 26th September, or thirty-eighth day. The first symptoms were acute pain in the left knee, shivering, fever, and sweating. In spite of the pain, he worked on the 20th August, but on the following day other joints became painful, and in the evening sickness and vomiting set in. As the days passed, he became worse; he suffered agony on the slightest movement of the joints; the articular pains interfered with sleep, and pain developed in the left side of the chest.

He was admitted on 25th August (sixth day) with pain in almost all the principal joints, the wrists and ankles being also swollen; the temperature was 104°. By midnight patient was delirious, and the temperature had reached 105.4°. It

¹ *Text-book of Pathology*, ii, p. 602.

rose to 106.6° at 6 A.M., and after falling a little, reached the same point again at 2 P.M., when it was reduced to normal by a bath. After this, it began to rise again almost immediately. On this day (26th August), there were noted a faint trace of albumen in the urine, a short systolic murmur over the right ventricle, and an eruption of miliaria rubra. It may be added here that by the 29th August, the albuminuria had disappeared, and that on the 27th August, the systolic murmur was not distinctly appreciable, so that practically both heart and kidneys remained unaffected throughout the whole illness.

27th August (eighth day).—Pains in wrists and knees, but not now in the chest. Marked acceleration of respiration. Signs of pneumonia at the left base posteriorly (impaired percussion; fine superficial crepitus; tubularity of R.M.; pectoriloquy). In the evening, violent delirium, which continued till next day.

29th August (tenth day).—Patient quiet and dozing, the typhoid state present in moderate degree. Percussion somewhat impaired over left scapular region. Chlorides absent from urine. No articular pain yesterday or to-day.

The temperature, as has been said, began to rise very soon after the bath on the day after admission. During the next three days (27th to 29th August), it fluctuated between 102.8° and 105° , except once when it dropped to 101° in connection with an attack of epistaxis. On the 30th August (eleventh day), it was 107.4° at 9 A.M. and at 10 A.M., after which it fell, under the influence of the bath. When the temperature was at its maximum, the pulse was 152, and the respiration 44; patient lay in a condition of almost absolute lethargy, but there were marked jerkings of the tendons about the hands. The bath at once brought about a great improvement in his condition. At this period, it was difficult to get him to swallow; the rectum was irritable; and urine and fæces were passed into the bed. Patient was still free from cough.

From this time on for some days (say, eleven to fourteen days), the temperature could only be kept within safe limits by the use of the bath. Even on the fourteenth day, it refused to be controlled by antipyrin, and the rise continued till the bath was renewed.

31st August (twelfth day).—Twitchings of arms, face, and sometimes legs. Tongue moist, but thickly coated. Strong tendency to hyperpyrexia continues.

1st September.—Patient constantly immersed since last

evening; asked for milk and tea; looks as if taking an interest in external things. He cannot open his mouth except very slightly, though apparently willing to do so. Apparently some difficulty in swallowing. Patient coughed several times in the night.

2nd September.—Removed from bath in the morning to have chest examined. *Right* lung now consolidated up to fifth rib in nipple line, and in its lower half posteriorly. Feeble R.M., and bronchophony in scattered areas over *left* back. Patient coughed a little, and once or twice tried to spit.

3rd September.—Marked improvement. Patient speaks, shows his tongue when told, the first time it has been seen for several days. Urine still passed in bed; chlorides absent from a sample collected. Spleen not obviously enlarged. At *left* back, no frank dulness; but from mid-scapula all the way down, crepitus, tubular or bronchial R.M., and bronchophony. On *right* front, dulness up to lower border of fourth rib, with tympanitic percussion for an inch or two above this. At *right* back, complete dulness up to lower angle of scapula or seventh dorsal spine, and partial dulness higher up; over the dull area, coarse moist crepitus, with tubular or bronchial R.M., and bronchophony. Articular pains returned this morning after an absence of six days.

4th September (sixteenth day).—Patient fully conscious; no delirium during the night. Articular pains gone and replaced by stiffness. Chlorides returned in part to the urine.

6th September.—Percussion clearing up over right back; chlorides abundant; very little cough and no spit.

8th September.—Percussion over right back much clearer; abundant crepitus, redex, and bronchophony. Coughing not oftener than three times in twenty-four hours. No spit.

On 22nd September it was noted that percussion was normal over the left chest and at the right back. It is interesting, however, that as late as 27th October, though the chest had been perfectly healthy for some time, pulmonary percussion in the right lateral region was still somewhat tympanitic.

The bath was finally stopped on the 3rd September (fifteenth day), but the temperature reached or exceeded 104° repeatedly up to the 7th September. Thereafter it gradually fell, and from the 12th to the 20th September (twenty-fourth to third-second day), it was below 101°. From the 21st to the 26th (thirty-third to thirty-eighth day), it was higher again, once reaching 104°. From the 27th September

(thirty-ninth day) onwards, the temperature was normal or subnormal.

The hyperpyrexia was at first treated by the cold bath. The patient was put into water at about 100° F., the temperature of the bath being rapidly reduced, by the addition of cold water and by melting ice, to about 60° F. The results were excellent, but only temporary. Therefore, after a series of such baths had been employed, and the tendency to hyperpyrexia was found to persist, it was arranged to keep the patient immersed continually in water of the maximum temperature sufficient to restrain the fever within safe limits. The necessary bath-temperature was from 90° to 100°. Patient while immersed seemed quite comfortable; slept, and took his milk and other nourishment. This treatment was employed from the 31st August to the 3rd September with several interruptions to allow of clean water replacing that which had been soiled by the evacuations, to permit of the chest being examined, or for some other such purpose. This method avoided the undesirable necessity of constantly shifting the patient from bed to bath and back again, with the risk of hyperpyrexia in bed and collapse in the cold bath. It allowed him to rest quietly with a considerable degree of consciousness retained, and so to swallow nourishment better, and it allowed him to sleep almost undisturbed. But, besides these considerations, there are two great advantages which the continuous warm bath possesses over the cold bath—viz., in respect of safety, and in respect of efficacy. The risk to be feared in using the cold bath is that the peripheral vessels will at last respond to the influence of cold by contracting, and so add to the resistance which the heart, weakened by the abnormal state of the blood, has to overcome; with the warm bath this risk is avoided. And in the second place, since the warm bath allows the cutaneous vessels to remain dilated, an abundance of blood comes to the surface to be subjected to the lower temperature of the external medium.

Among the drugs that were employed in the treatment of this case may be mentioned salicin, salicylate of soda, perchloride of iron, and sulphate of quinine. It is not quite certain that any of them did good, and salicylate of soda was given for a time in doses of 20 grains every two hours. As to the value of the bath there was, of course, no room for doubt—it saved the man's life—and there was no doubt as to the superiority, in this case, of the continuous warm bath. Drugs appear to have no effect upon the fever. More than

once (26th August and 2nd September) 20 grains of antipyrin were given when the temperature was rising without any effect in arresting the rise, so that the bath was required.

27th October.—From the time when the patient became sensible, he complained of some numbness in the inner digits of his hands. The condition is improving in both hands, and, at the worst, did not extend above the wrists. On the right side there is numbness (both in front and behind) in all parts of the little finger, in the ulnar border of the ring-finger, and in the ulnar border of the hand. Tactile sensation in the fingers is diminished. Movement is unimpaired, but for a time the little finger could not be extended. On the left side there is numbness in the same parts, but tactile sensation is well preserved. The little finger is fully extended at the metacarpo-phalangeal joint, and flexed at the proximal inter-phalangeal articulation.

29th October.—Patient left hospital.

29th December.—Sensation is not yet normal in the ulnar margin of either hand. There is little, if any, defect of power. Patient looks well and stout.

As the illness began with severe pain in the knee, it is probably to be regarded as primarily rheumatic. The pain in the left side, which began before patient was admitted to hospital, points to the onset of the left pneumonia; and the great acceleration of respiration, which took place on the second day after admission, may, perhaps, be taken as indicating the commencing involvement of the right lung. This is consistent with the fact that eight days afterwards the chlorides were in part restored to the urine. During the greater part of this period of eight days (eighth to sixteenth day), the articular pains were in abeyance. This period likewise included the prolonged stage of hyperpyrexia, but hyperpyrexia had also occurred on the day preceeding the great acceleration of respiration.

It is probable that the slight ulnar neuritis was due not so much to the rheumatic poison, as to prolonged tension of the ulnar nerves, especially while the patient lay on his back in the bath, with his upper arms bound to his sides by the blanket, and his forearms lying on the front of his abdomen.

OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

SESSION 1897-98.

MEETING III.—22ND DECEMBER, 1897.

The President, DR. MALCOLM BLACK, in the Chair.

I.—COMPLETE OCCLUSION OF THE OS UTERI.

BY DR. BLACK.

The patient was a primipara, and had been in labour for over twenty-four hours before admission into hospital. Careful examination was made under chloroform, but it was impossible to discover any os. A small transverse incision was made in the cervix, and labour allowed to progress. As tearing began, two other incisions were made in the anterior and the posterior lips. The forceps was then used. Some bleeding occurred at the upper part of the vestibule, requiring two ligatures for its arrest. Beyond a little sloughing at this point the patient made a good recovery.

II.—CASE OF SIX MONTHS' RETENTION OF URINE, PROBABLY DUE TO THE PRESENCE IN THE BASE OF THE BLADDER WALL OF A NEEDLE, WHICH MADE ITS WAY INTO THE VAGINA UNDER THE INFLUENCE OF MASSAGE.

BY DR. BALFOUR MARSHALL.

Miss J., age 21. Right arm is functionless, hand being flexed at wrist, and smaller than left hand. This followed on an attack of cerebral inflammation about ten years ago.

In May, 1897, she began first to suffer from retention of urine, which gradually got worse until she could not micturate at all. Treatment proved of no avail, and when I first saw her in August last retention was absolute. The uterus and annexa were normal, and the vagina was that of a virgin, although the hymen had been torn by previous examination and the introduction of a pessary, the object of which was not apparent. The vagina would not admit two fingers without pain. Bimanual examination detected nothing abnormal in

the bladder, and the sound introduced into that viscus caused no undue pain, nor discovered the presence of anything abnormal. A No. 8 catheter could be easily passed along the urethra into the bladder, without any stricture or obstruction being met with.

I sent the patient into the Royal Infirmary, and she was there on two occasions, as well as being sent twice to a convalescent home. The urine was drawn off by a nurse twice daily, but by November she was no better, and I resolved to try the effect of massage bimanually, one finger being placed in the vagina. Whenever the region of the trigone of the bladder was pressed on, the patient complained of a painful prickling sensation. Massage was carried on for three days consecutively, the patient being able to pass several ounces on each day following.

Menstruation set in on the fourth day, and massage was not performed till three days later. In the meantime, retention was again absolute, and urine had to be regularly drawn off by the nurse. On resuming massage for the fifth time, the finger, on being introduced into the vagina, discovered an ordinary sewing needle lying transversely across the anterior fornix. It was removed by forceps, and found to be blackened, but showed no signs of rust.

Since the removal of the needle, further treatment is not required, as the patient from that time has had no further retention. The only medicine given during this time was nux vomica. As to the presence of the needle, I can only assume it was the cause of the retention, and lay somewhere in the base of the bladder, and that the act of massaging had made it work its way into the vagina. The patient can give no account as to how it got there, nor does she remember any accident likely to lead to it. She had when a girl the habit of holding pins and needles in her mouth while sewing, but I think that has nothing to do with it, as she would have recollected had she swallowed one. She could not have placed the needle where it was found, as she has only the use of her left hand, and the needle was too high up, and so placed as to exclude this idea; and, further, the vagina does not admit of the introduction of two fingers. I could not detect any evidences of hysteria, although I watched carefully for these, and always had the urine drawn off by a nurse, except on the occasions when I massaged. Moreover, the removal of the needle suddenly cured a six months' retention of urine.

III.—CASE OF SUPERNUMERARY NIPPLES IN THE GROIN OF A PRIMIPARA (ILLUSTRATED BY PHOTOGRAPHS), WITH A GENERALLY CONTRACTED FLAT PELVIS.

BY DR. BALFOUR MARSHALL.

This patient, aged 19, has a generally contracted flat pelvis. In placing her in Walcher's position for delivery by forceps, I noticed well marked supernumerary nipples, one on each thigh. They are situated on the antero-lateral aspect of the thighs, a little below the fold of the groin, and close to the vulva. In size they correspond to those on the adult male breast, and are firm and erect, and show a distinct opening in the middle of the apex. The right nipple is surrounded by a well marked blackish pigmented areola, the size of a shilling piece. The left nipple is also surrounded by an areola, but it is very faint. The photograph shown at the meeting was taken three weeks after labour. The areolæ have quite disappeared, and the nipples are less than half the size observed at the end of pregnancy; indeed, the right nipple is difficult to make out on the photograph, as it has atrophied in such a way as to look more like a tag of skin.

The child, unfortunately, died twenty hours after labour, delivery by forceps in the second stage having taken four hours. It would have been interesting to see if the nipples and areolæ maintained the same appearance and size as at the end of pregnancy, had the patient suckled her child.

IV.—CASE OF PERNICIOUS VOMITING AT THE EIGHTH MONTH OF PREGNANCY REQUIRING INDUCTION OF PREMATURE LABOUR.

BY DR. BALFOUR MARSHALL.

Mrs. M., aged 33, vii-para, married at age of 17, has had seven children, of which the first two are still living.

Former History.—The first child was born nine months after marriage. Labour was very prolonged, as the pains commenced six days before the child was delivered. For three days she was able to move about, but on the fourth she had to take to bed, as her lower limbs began to feel heavy and numb. This feeling of numbness gradually increased until all sensation was abolished, and she was insensible to the prick of a needle in both lower limbs. They were both pale in colour, but not swollen. At the same time she had retention

of urine necessitating regular catheterisation of the bladder, but she still had control of the rectum.

On the sixth day the child was delivered by forceps, the perineum being badly torn. I cannot say when the first stage of labour was ended, as the date of rupture of the bag of membranes is unknown.

The accoucheur took away the placenta, as the cord is alleged to have been as thick as a man's arm, and the placenta is said to have had a child's hand attached to it.

The loss of sensation and power in the lower limbs continued, and she lay in bed for six weeks, until she was removed to Hillside Home, Perth. Electrical treatment was here carried out thrice daily. After four months of treatment a prickly sensation came in the soles of the feet, and this gradually merged into that of pain. This was followed by a very gradual return of sensation in both limbs, the pain at the same time disappearing.

It was not till after eighteen months of treatment that she was able to walk a very little. Elastic bandaging and massage were now resorted to, and six months later she was able to walk quite well, all symptoms having disappeared and recovery being complete.

She remained perfectly healthy, and her second child was born about four years after the first, the labour being quite normal.

The third child was born about two years later, prematurely, at the end of the seventh month, and it only lived an hour. Fourteen days previously she was seized with sudden onset of vomiting which continued at intervals. She could retain no food, and got ice to suck. It ceased abruptly after labour.

The fourth child was born about two years later, at the end of the seventh month. It was macerated, and had been dead *in utero* for some time. During the previous six weeks she had a similar attack of emesis gravidarum to that of previous pregnancy. She could only retain ice and small doses of diluted whisky. It ceased spontaneously on the birth of a macerated foetus.

The fifth child was born about two years later, at full time, but it had been dead *in utero* for some time. She had again six weeks' sickness similar to previous pregnancies, and it ceased on the birth of her child. She was sustained by rectal feeding, and ice was given to suck.

The sixth child was born a year later, about the eighth month, and was, as in former pregnancies, dead. This time she had sickness during the previous two months, and had to

be fed *per rectum*. The sickness did not cease at the birth of her child, but lasted for a week into the puerperium.

History of Seventh Pregnancy.—Patient last menstruated at end of March, and pregnancy was uneventful till 20th November, 1897. On getting off a tramway car she tripped and fell heavily on her side. That evening vomiting set in and became very severe. No food would lie on the stomach, and a teaspoonful of water or nutriment was at once rejected. Various gastric sedatives were tried, but they were all promptly vomited, so rectal feeding was resorted to. The vomiting became more severe, occurring at short intervals day and night, only small quantities of bile-stained fluid being ejected.

The rectum now became intolerant of bowel feeding, and even quantities of a wineglassful were not retained. although I tried morphia suppositories to prevent this. Small nutrient suppositories were now tried, and were fortunately retained. Dilatation of the cervix was also tried, but met with no success.

As the patient was becoming greatly exhausted from the incessant vomiting, want of nourishment, and loss of sleep, I decided to induce premature labour, more especially as the three former children had all died *in utero*. I hoped to save this one.

The uterus was much enlarged, and very globular in shape, extending well into the flanks, while the fundus reached to within 3 inches of the sternum.

Ballottement, both externally and internally, was very well marked.

The foetus lay with its back to the right and the head presenting, the foetal heart being heard with difficulty below the umbilicus and to the right.

On 2nd December I dilated the cervix, first with the fingers, then by Barnes' bags, and lastly by de Ribes' bag, until the os was nearly fully dilated. The membranes were now ruptured, when a very large quantity of liquor amnii escaped. As there was inertia uteri, I delivered the child by forceps. The child, a male, was 16½ inches long, and was about the eighth month. It was stillborn, and artificial respiration had to be performed for an hour and a quarter before it survived. It seemed to do well, taking nourishment freely, but it died in thirty hours after three convulsive seizures.

The uterus was very flabby, and it required two hypodermic injections of 30 minims each of normal liquid ergot before it

retracted properly. There was no post-partum hæmorrhage. The placenta was small and fatty, and was unduly friable, tearing easily.

Twelve hours after labour the patient was able to retain small quantities of whisky and soda water, and twenty-four hours later meat juice, fish, and gruel. From this time on she did well, and being able to take ordinary diet made a rapid recovery.

V.—A CASE OF MELANOTIC SARCOMA OF THE CLITORIS.

BY DR. BALFOUR MARSHALL.

Mrs. S., age 57, widow, came to Glasgow Royal Infirmary Dispensary, 12th August, 1897. The patient complained of a lump on the vulva, blood-stained discharge, and scalding on micturition.

Patient has had three children, and no miscarriages. She passed through the menopause at the age of 45, the catamenia ceasing twelve years ago. She had a general skin eruption with loss of hair five years ago, which suggests specific disease, but of this there are no present signs. She was otherwise well till four months ago, when she had irritation at the anterior part of the vulva, and noticed a small tumour the size of a large pea. This rapidly got larger, and she had scalding pain on micturition, also a constant watery discharge which became blood-stained. The tumour does not seem to have caused much pain, as she did not complain of this except during micturition.

Examination.—The site of the clitoris is occupied by a dark-bluish and bluey-red slightly lobulated tumour of the size of a small walnut. It has spread laterally so as to implicate the inner aspect of the anterior halves of both nymphæ, but does not seem to have spread deeply to the tissues beneath. There is, in addition, a small dark-bluish nodule of the size of a small pea projecting from the inner aspect of the lower edge of the right nymphæ, distant about half an inch from the larger tumour, and there is a similar nodule at the bottom of the fold between the left nymphæ and left labium majus. On the inner aspect of the right labium majus, extending as far back as the fourchette, there are patches of dark pigmentation, which do not as yet form nodules. The ostium vaginæ and urethra are not affected. There is slight enlargement of the inguinal glands.

Vaginal and Bimanual Examination.—The vagina is shortened and contracted, the portis vaginæ atrophied, and the uterus small and atrophied, the generative organs presenting the conditions found in a woman twelve years past the climacteric. The patient was sent into Ward 26 on 21st August, 1897.

25th August.—Dr. Rutherford operated, and reported as follows:—"He excised the tumour with both labia minora and the pigmented areas of skin in the right labium majus and posterior commissure, and there was no difficulty in keeping clear of the urethra. The skin edges were brought together anteriorly and posteriorly with silkworm gut."

Patient left the infirmary on 5th October, the soundly healed part of the wound having closed by granulations.

The main part of the tumour has originated in the clitoris and preputium clitorides, and on section is found to be a melanotic sarcoma with some hæmorrhage into its substance.

Remarks.—Sarcoma of the vulva is very rare, much more so than primary carcinoma, and there are few cases recorded in medical literature. So far, I have been able to collect only 19 cases. Of these, 1 is a round-celled sarcoma; 2 are myxo-sarcoma; 3 are fibro-sarcoma; 13 are melanotic sarcoma; and of these only 2 seem to have started in the clitoris. It will thus be seen that melanotic sarcoma is the form most frequently met with. It is of rapid growth and exceedingly malignant, spreading by the lymphatics, and giving rise to metastatic growths in other organs. The results of operations are most unsatisfactory, and only two are recorded as ending in recovery, recurrence being the rule in all the other cases.

It has been alleged that this tumour occurs chiefly in young women, but, with one exception, the age of first appearance varies from 40 to 72, and of these most are in women between 40 and 60.

As to origin, Veit holds that melanotic sarcoma of the vulva arises from a pigmented nævus, while Taylor says that it begins as a purple spot in the deep layers of the mucous membrane; that this next becomes a small nodule, which grows rapidly, and when larger appears as a warty fungoid-looking tumour. The excised portion of vulva which I have shown you to-night has all three conditions present—viz., pigmented spots, two small nodules, and a slightly lobulated fungoid-looking tumour.

VI.—A SIX MONTH FŒTUS WITH AN INTRA-UTERINE AMPUTATION OF THE FOOT.

BY DR. JARDINE.

Dr. Jardine showed a six month fœtus with an intra-uterine amputation of the foot, and deformities of the other foot and hands. It was suggested that a detailed report on the case might be prepared for a future next meeting.

MEETING IV.—20TH JANUARY, 1898.

The Senior Vice-President, DR. ALEX. MILLER, in the Chair.

I.—FRESH SPECIMEN.

BY DR. EDGAR.

Placenta biloba with velamentous insertion of the funis from a case of placenta prævia.—The patient was a secundipara, and was eight and a half months pregnant. She had bled slightly three weeks before, and then severely two weeks thereafter (20th January), when she was plugged by her medical attendant, Dr. Langmuir. The plug was renewed several times with good effect as regards hæmorrhage, until the 27th, when profuse flooding recurred, and Dr. Edgar was called in consultation. He found the patient weak, with a pulse of 120, and on examination found the os dilated to the size of a crown-piece, membranes still unruptured, complete placenta prævia, and head presenting in the left occipito-anterior position. The edge of the placenta was fairly easily reached in front, and by means of bipolar version a foot was seized and brought down. The bleeding, which till then had been rather free, was easily arrested by traction on the child's leg. The breech was delivered slowly, but, as pulsation in the umbilical cord was then found to have ceased, and the cervix was dilatable, the arms and legs were delivered quickly. The child was apnœic, but animation was restored after fifteen to twenty minutes' work. Both mother and child (male) were doing well. Preparations had been made for saline transfusion, but it was not found necessary to adopt this measure. Examination of the placenta showed that it was cordate in shape, and about $6\frac{1}{2}$ inches in diameter. The funis,

20 inches long, was inserted into the membranes, 3 inches from the edge of the portion of placenta which had overlapped the internal os. The umbilical vein, an inch from the site of insertion of the funis, divided into two branches, which diverged and entered the placenta on opposite sides, at points 5 inches apart. The triangular portion of membranes between these two branches and the edge of the placenta was torn, and, as this was the only aperture in the membranes, the child had evidently been born through it. One of the umbilical arteries accompanied its corresponding vein closely all the way to the placenta, and, like the two branches of the vein, was uninjured. The other artery, however, entered the placenta an inch within the vein, and had evidently traversed the triangle, as it was found to have been torn through.

II.—UTERUS FROM A CASE OF CÆSAREAN SECTION.

BY DR. JARDINE.

The patient was a ii-para, aged 22. Nearly two years before she had been delivered at the seventh month of a macerated fœtus, which came by the breech. Craniotomy had to be done on the after-coming head. When admitted on the night of 16th January she was having strong pains, and the os was dilating. She gave a history of painful and frequent micturition, and her vagina was red and inflamed with some purulent discharge. There were albumen, pus, and tube-casts in her urine. The child was alive, and presented in the second vertex position. Dr. Jardine decided to do Cæsarean section, although he felt it was a case which would run great risks of becoming septic, as she seemed to be suffering from gonorrhœa. The conjugate was under 2 inches, and he felt that craniotomy would be hopeless, as the body would have to be broken up as well to get it through.

The membranes ruptured before the operation was done. The vagina was very thoroughly scrubbed and douched out. The operation was done in the usual way, using Cameron's pessary to control the bleeding. He delivered the child by the feet. It gasped, but did not survive. It weighed 7 lb.

The patient stood the operation well, and did well for forty-four hours, when she had a rigor, and her temperature rose to 103·4°. It fell in about an hour, and never rose above 100° again. The wound looked perfectly healthy, and there was no distension of the abdomen except for a little after the rigor. She lay in a semi-conscious condition, and died four days and two hours after the operation.

At the *post-mortem* examination, some pus was found over the front of the uterus, and there was evidence of general peritonitis. The abdominal wound was healing, except at the lower part, where an abscess was beginning to form from the inside. On removing the uterus and opening it up posteriorly, a greenish-yellow purulent lining was seen. The lower end of the wound gaped slightly, and in separating the edges several of the stitches were seen. It was by these the infection had travelled. Dr. Buchanan had examined the pus from the peritoneal cavity, as well as that in the passages, and he had found identical organisms in both, viz.—a coccus and the bacillus coli. He could not definitely decide if it was the gonococcus. The true conjugate, when everything was removed, measured $1\frac{1}{2}$ inch.

Dr. Jardine regretted he had not done a Porro, as he now thought this would have given her a better chance. In future cases he intended to keep the incision as near the fundus as possible.

III.—TWO SILK STITCHES FROM A CÆSAREAN SECTION.

By DR. JARDINE.

Dr. Jardine showed two silk stitches which had been discharged through an abdominal sinus from a case of Cæsarean section done by Professor Cameron eleven months before. Two months after the operation the patient had discharged several stitches *per urethram*, and a week or so later the sinus had opened, and remained open ever since. The patient had been under his care for about six months. The uterus was adherent to the abdominal wall, and with a probe he had felt the stitches, but could not get them out. They had come away a few days ago, and the sinus was now apparently closing. They were as perfect as when put in. She had also passed a frayed one *per urethram* about a month ago. He had sounded the bladder and felt it. There was no deposit on it. This patient had developed a parotid abscess a few days after the operation; otherwise she had made a good recovery.

IV.—CASE OF PRIMARY CARCINOMA OF THE BODY OF THE UTERUS—ADENOMA MALIGNUM.

By DR. SLOAN AND DR. JAS. A. ADAMS.

Mrs. J. H., æt. 57, widow for fifteen years, has had four children, no miscarriages. Last period was three years ago;

has been in indifferent health for about two years. Has had a discharge of blood from the vagina every day for nine months, and there has been an increased quantity of leucorrhœal discharge during the past two months. The discharge has always been fresh in odour. For six weeks past has complained of a feeling of weight and of pain in the hypogastric region. Was told by a medical man a short time ago that there was no serious disease, certainly not cancer.

Per Vaginam.—Cervix normal and smooth. Os small and healthy-looking. The uterus is freely movable, and the sound passes in a depth of $3\frac{1}{4}$ inches, causing some pain. The cavity is dilated, and the anterior and posterior walls, when the sound is drawn over them, are rough and firm, like hard shelves of tissue.

Curettage was advised; and, if the tissue removed gave evidence of carcinoma, vaginal hysterectomy was to be performed. The uterus was dilated on 25th November, 1897. The dilatation was suspiciously easy, and copious soft material was removed; iodised phenol being afterwards freely applied to the whole of the cavity. There was only slight bleeding. After dilatation the sound passed in to the extent of 4 inches. The patient's health greatly improved after this operation, but bleeding continued more or less till 15th December.

On 1st December, the following report was received from the West of Scotland Clinical Research Laboratory:—"It is a carcinoma of the glandular type—a malignant adenoma. The section consists of masses of columnar epithelium, set in distinct acini, like tubular glands, in a very scanty fibro-cellular stroma. Much of the epithelium is swollen and vacuolated, but in parts it is well-preserved. In the latter are to be seen numbers of the so-called cancer bodies—round, clear bodies, with a stained point like a small nucleus, mostly in the basal parts of the cells."

On 15th December vaginal hysterectomy was performed by Dr. Jas. A. Adams and myself. Ligatures were used—silk and gut—and there was very little bleeding. The appendages were left, as they seemed to be quite healthy. As will be seen from the uterus, the cervix is quite free from disease over the whole of its extent, but in the body the whole of the endometrium is involved—not uniformly, but in masses, protruding into the cavity. The walls are free from the disease so far as the naked eye can discern, but are thickened antero-posteriorly. The patient made an uninterrupted recovery; the temperature in the mouth never rising so high as 101° . The discharge continued till the silk ligatures were passed—about the

sixteenth day—when it almost suddenly ceased. I examined her on the 21st January, 1898, and have noted as follows:—“The roof of the vagina is completely closed in by a line of cicatrix, quite smooth and soft, and with a shallow dimple in the middle. Her appetite is good, and she sleeps well, the general health being better than it has been for two years.”

Dr. Edgar said that *Dr. Sloan* deserved the thanks of the Society for bringing the case before them, as the condition was rare. Curetting had made the diagnosis certain. It was desirable to get all curettings examined microscopically. He referred to two cases, however, which had been examined in this way, and were reported by a pathologist as adenoma malignum, but bleeding had not recurred, and the operation was postponed for a time, the patients being kept under observation. With regard to the result of the operation, he could tell of one case in which no stitches were put in the cut surface, and in five days, on removal of the tampon, the aperture left only admitted one finger.

Dr. W. L. Reid said there could be little doubt about the nature of the case, even from the naked-eye appearance. He fancied that hardly any medical man would in these days say positively there was no cancer in any case. By far the best plan was to dilate and curette. He would have liked to hear more details about the operation. He had had lately a number of vaginal hysterectomies, and two or three of them had been very difficult. The burning question with him was when he ought to operate. A week ago, a case he had expected to be very difficult, turned out to be easy. In a previous case, which he thought likely to give little trouble, the disease was found to extend through the cervix and implicate the base of the bladder.

Dr. Balfour Marshall said that the history of the case described by *Dr. Sloan* was pretty typical, hæmorrhage occurring after the menopause, and a discharge that was purulent but not evil-smelling. He then referred to the microscopic appearances, and said that he had put on the table four sections of different forms of carcinoma by way of contrast with the specimen shown. It had become a maxim with him that copious hæmorrhage after the menopause was to be treated as carcinoma. Diagnostic scraping was the correct thing to do. There was no diagnostic value in the easy dilatation of the cervix. He had seen cases of malignant disease when the dilatation was by no means easy. He used a thin probe-sound which detected the slightest irregularities

of the internal surface of the uterus. He also laid stress on the almost indefinable soft feeling of the uterus.

Dr. Sloan, in reply, admitted that no man was justified in saying there was no cancer. He had not described in detail the steps of the operation, as it was so often done now, and they had had no difficulty. He had found it easier to bring the fundus through Douglas' pouch by his fingers than by the volsellum. He emphasised the importance of examining the scrapings. He could not help attaching importance to the ease of dilatation.

V.—FOUR CASES OF ECLAMPSIA, IN WHICH TINCTURE OF
VERATRUM VIRIDE WAS USED.

BY DR. SLOAN.

CASE I.—*Dr. Andrew S. Tindal*, with whom I saw this case, has kindly given me the following report of it:—*Mrs. A. K. T.*, æt. 28 years, primipara, became ill about 3 P.M. on 7th August, 1897. First seen about 9.35 P.M., when the second stage was well advanced. The head was in the first position, with the occiput well down to the perineum.

The patient was very quiet, but the labour pains were strong and frequent. About ten o'clock the nurse gave the alarm that something was wrong, and the patient was found to be in a severe general epileptiform convulsion. Chloroform was at once given, and delivery rapidly effected with the forceps. The child was slightly asphyxiated, but was easily brought round. During the delivery, the perineum was torn for about half an inch. The placenta came away in about seven to ten minutes, assisted by expression. There was a fairly good discharge of blood during the third stage. The placenta was perfect when floated on water. The perineum was stitched with silkworm gut, and the parts cleansed with biniodide solution. The patient became partly conscious during the stitching of the perineum, and gradually became quite sensible. The uterus was kept firmly under control by the hand for nearly an hour, as a matter of precaution. The patient complained of slight headache, but chatted quite sensibly when spoken to.

A full hour after the birth, a second convulsion, lasting about five minutes, came on. All the convulsions were general, and typically epileptiform, the Jacksonian form being absent. There was an interval of one hour, when the next convulsion took place. Between the next two convulsions there were intervals of seventy-five minutes.

The patient was put on—

R.—Potass. bromid., 30 grs.
Chloral hyd., 10 grs.

Sig.—To be given every two hours.

This had little effect, as there were two fits within an hour of one another. The patient was now unconscious in the intervals between the fits, and was made to swallow with difficulty.

The patient's condition getting more serious, Dr. James Hamilton was asked to see the patient, in consultation, about 5:30 on Sunday morning. The tenth of a grain of pilocarpine was given hypodermically, and the skin acted fairly well. The urine was drawn off, and found to be loaded with blood. The convulsions continuing, the pilocarpine was repeated with a one-seventy-fifth grain of hyoscine. On this occasion the skin failed to act, and the hyoscine had no calming effect. During the day the patient was constantly watched, and chloroform was administered on the approach of a convulsion. The convulsions ceased about 5 on Sunday afternoon, the patient remaining comatose, with stertor, high-tensioned pulse of over 140 and regular, and temperature varying between 102° and 104° F.

Throughout Monday, the 9th, the patient's condition remained *in statu quo*, and at 4:30 P.M. she was seen, in consultation, by Dr. Samuel Sloan. At 4:38 P.M. the pulse was 144, and 15 minims of tinct. veratri viridis were injected hypodermically. Fifteen minutes later the pulse was 120, softer, and the stertor less marked. A second hypodermic of 15 minims was then given. At 5:12 P.M. the pulse was still 120, when 20 minims were injected. At 5:30 P.M. the pulse was 88, and very soft, and, as there was sickness and retching, it was decided to do nothing for an hour. At 7:5 P.M. the pulse was 84, regular, but of very low tension. There was no stertor, and the temperature was 102.2° F. The condition remained much the same till about 10 P.M., when the breathing became laboured, and the lungs were full of moist râles. The cardiac rhythm was markedly irregular, and the pulse very small. The patient died at 11 P.M., the respiration being continued after the pulse. The question of venesection, injections of morphia, and hot packs were discussed, but negatived.

CASE II.—Mrs. J. was seen by me with Dr. Robertson,

Dumbarton, on 17th August, 1897. She was seven months gone in her first pregnancy, and the urine was highly albuminous. She had had four convulsions in all, the last one at 10 A.M., about three hours before my visit. The pulse was hard and frequent, and hypodermic injection was given of 15 minims tinct. veratri viridis. Dr. Robertson reports that the pulse became slower and softer; and, there being no more convulsions, he gave no more injections. She was confined on 19th September of a stillborn macerated foetus.

CASE III.—Mrs. R. F., primipara, confined at full term on 21st September, 1897. There had been slight albumen in the urine for several weeks before confinement. This was treated by comp jalap. powd., restricted diet, wet compresses to the loins, and bromide of potassium internally. Her labour was severe and prolonged. The pulse rose very high—about 130—and the patient was becoming “dazed,” and her hands were observed to twitch. First one and then another hypodermic injection of 15 minims of tinct. veratri viridis was given. The pulse fell, and the twitching ceased. The patient after a short time expressed herself as having felt “very queer” before the injections, but “quite different” after, and she looked it. No convulsions occurred, and her subsequent recovery was excellent.

The next is a non-puerperal case.

CASE IV.—Mrs. P., æt. 47, was seen by me in consultation with Dr. Kennedy, Bearsden, on the evening of 3rd December, 1897. She was suffering from cirrhoses of the kidney. There was only a slight amount of albumen in the urine, and the specific gravity was 1010. Tube-casts were present, granular and fatty. She had had left hemiplegia six months before the date of my visit. Convulsions came on suddenly on the evening of the 3rd, the last one being at 8:30 P.M. I found the patient, at 9 P.M., comatose, and with a pulse of 108, full and hard. We then gave her by hypodermic injection 15 minims of tinct. veratri viridis. At 9:15 the pulse was 98, and softer; at 9:20 another injection of the same amount was given. The pulse at 9:35 was 93; at 9:50 it was 86, and soft. The patient was now perfectly conscious, and feeling so well as to wish to rise. Dr. Kennedy, eight days after, reports that within one hour after I left the pulse had fallen to 40, though the patient seemed as well as when her pulse was 86. He then gave three teaspoonfuls of whisky. Vomiting followed. The whisky was repeated, and the pulse was, one hour later, 72.

It had practically remained so since, and the patient had been "very well." On the 4th of this month (January) the report is—"Very well since."

I am sorry that these notes are so incomplete, but I have thought them worth presenting as they are. Note, first, that no convulsions appeared in any of the cases after the first dose of the drug; second, that, in every instance, the pulse diminished in frequency and in tension. I think the following deductions are justifiable from even so small a number of cases:—

1. That *veratrum viride* is a powerful or a dangerous drug, according to how it is used.

2. That it can be relied upon, if it is pure, to reduce the force and frequency of the pulse where these are abnormally high.

3. That it may prove of signal service as a preventive of eclampsia, in cases where such a calamity is threatening.

4. That it is safe to predict that the pulse will fall much lower than it has done fifteen minutes after an injection.

I shall therefore, in future, allow thirty minutes to pass before repeating the dose; and shall, as a rule, give no more than two injections within two hours.

Dr. W. L. Reid said that he presumed that not many had had the chance of giving *veratrum viride* large trial. He had tried it first in 1887, and he thought he had killed his patient, so great was the effect of the drug. If the pulse were reduced below 60 there would certainly be no more convulsions. He had gradually, by increasing experience, come to have confidence in its use. *Dr. Sloan* had put it wisely. Half an hour was a safer interval, and after the second dose they should wait for some time. It was a treacherous drug. He would now use a small dose—10 minims to begin with—and give it more frequently.

Dr. Balfour Marshall said he had no experience of the use of *veratrum viride*. He had never been induced to depart from chloroform, for which as much could be claimed. He had kept up chloroform in one case for thirteen hours. *Veratrum viride* had the power, if given continuously, of exciting motor cells, and would thus cause convulsions. *Dr. Sloan* had erred on the side of heroic doses. The first case looked as if she had been poisoned; 50 minims had been given hypodermically, and sickness and vomiting had followed. In another case a drop in the pulse-rate to 40 had been noted.

He had never heard it mentioned, nor seen it used, during two years of residence in Germany, nor was it mentioned in the special literature or text-books of England. If he used it at all, it would be in smaller doses, and he would wait longer before giving additional doses. The hot pack was one of the most advantageous means of treatment. Two doses of pilocarpine had been given in one case. This was a dangerous drug to use, and he had noted that in this case there had been moist râles in the chest. He would depend on the hot pack, early and complete evacuation of the bowels by castor oil or other drug, and chloroform and chloral.

Dr. Jardine had had a little experience of *veratrum viride*. He found that the Americans never now give less than 30 minims (equal to 60 minims of our solution). It had been used in the Maternity Hospital. In one case there was improvement during the first twenty-four hours, but became worse afterwards. He gave 30 minims of the *British Pharmacopæia* solution, and also injected a saline solution into the left axilla. The hot pack was used, and the patient drank large quantities of fluid. 100 to 150 ounces of urine were passed, and the pulse fell from 115 to 76. Another patient got it. She had complete suppression of urine, and died.

Dr. J. Coulson Howie had had several cases of eclampsia, and had seen the advantage of the hot pack, followed by linseed poultices round the loins, chloral in enema (40 grains), chloroform, and repeated injections of morphia.

Dr. Sloan, in reply, said there was still much to learn about *veratrum viride*. As a result of his experience, he would give big doses, and not frequently.

THE FORFARSHIRE MEDICAL ASSOCIATION.

THIS Society met in the University College, Dundee, on Thursday, 4th March, at 8.30 P.M., Dr. G. O. C. Mackness, Vice-President, in the chair.

The SECRETARY showed for the President, Shaw's self-retaining operating vaginal speculum, which Dr. Campbell had found very useful.

MR. GREIG showed a specimen of an old-standing intracapsular fracture of the neck of the femur which had simulated during life a dislocation of the femur into the sciatic notch.

DR. G. F. WHYTE showed a heart in which a portion of the

wall of the left ventricle was calcified to such an extent as to be translucent. At the *post-mortem* there were numerous pericardial adhesions. He considered from its appearance that it was calcareous degeneration of muscle, and not atrophy following degeneration of pericardium.

DR. KYNOCH showed a uterus removed by vaginal hysterectomy for cancer of the cervix. The patient, *æt.* 41, had a history of two months' hæmorrhagic discharge. The disease was limited to the posterior lip of the cervix. Dr. Kynoch also showed a specimen of myxomatous degeneration of the chorion. The case had presented unusual symptoms and difficulty in diagnosis.

DR. STALKER read notes of a case of spinal myelitis of syphilitic origin. The chief symptoms were girdle pains, paralysis of the lower limbs, hyperalgesia in parts, incontinence of urine, exaggeration of deep reflexes, with absence of rigidity. The case improved rapidly under treatment, the sensory symptoms being the first to yield. Dr. Stalker discussed the main features of the case, and showed how it differed from cases of ordinary myelitis, from which Erb was the first to mark them off.

DR. BUIST read notes of the treatment of cystocele, describing the operations which were formerly performed, and pointed out wherein they failed to accomplish a permanent cure. He went on to describe the more recent operations, and gave notes of a case on which he had operated. He made a vertical incision in the anterior vaginal wall, stitched the postero-inferior portion of the bladder wall in folds, and made the vertical incision into a transverse cicatrix. The result of the case was relief without recurrence six months after.

Dr. Kynoch considered that though there had been no recurrence in Dr. Buist's case, no case would be cured permanently until the real cause, the loss of support, were acted on by narrowing the vagina.

DR. HALLEY read notes of a case of acute general erythema following a septic ulcer. The case was that of a man, aged 70, who had suffered for several years from an ulcer of the leg. His ulcer became septic and gangrenous when he was admitted to the hospital. At the same time his whole body became covered with an erythematous rash. He had had no rigor or sore throat, and temperature rose to 101°. It was considered advisable to amputate the limb through the middle of the thigh, considering the weak condition of the patient and the condition of the leg. The case gave no trouble, the rash disappeared, and desquamation commenced immediately on

its disappearance. Dr. Halley discussed the possibility of the rash being due to an idiosyncrasy on the part of the patient to the carbolic lotion with which it was dressed, and quoted several cases in which an erythema had followed the administration of drugs externally or internally. He considered, however, that it was more probably due to septic intoxication, and quoted similar cases in support of this view.

MR. GREIG then read notes of cases he had had under his care when eczema and erythema had followed the application of antiseptic dressings. He spoke of a case in which he had operated twice for the same complaint, using the same dressings, with an interval of several years between the operations. After the second operation delirium and erythema occurred. He considered that the erythema in these cases was due to the absorption of some toxic substance, but not due to sepsis.

REVIEWS.

Diseases of Women: a Text-book for Students and Practitioners. By J. C. WEBSTER, B.A., M.D. Edin. Illustrated with 241 Figures. Edinburgh and London: Young J. Pentland. 1898.

WE have read this book with all the pleasure we anticipated when it was announced that a work on the diseases of women was about to appear from the pen of the accomplished author of *Ectopic Pregnancy*. We are of opinion that it is the best that has been written on the subject within recent years in the English language. It is addressed to students and practitioners, and both classes will find that it contains what they require. Specially admirable is the manner in which the author has succeeded (1) in giving prominence to the scientific basis of each subject under consideration; (2) in studying clinical features in their widest relationships, endeavouring to give them their proper proportional values; (3) in insisting upon caution in the adoption of therapeutic measures not yet thoroughly tested, especially of many of those which, in these latter days, have been hurriedly and recklessly forced into publicity (*Preface*). By constantly keeping these aims in view, the writer's account of the subject possesses unity and proportion of design and execution.

The book contains twenty-two chapters and an appendix on the explanation of menstruation. The first three chapters are devoted to anatomy; the following three to puberty, the nervous system in relation to pelvic disease, and the genital tract in relation to micro-organisms, respectively. Chapters VII, VIII, and IX deal with case-taking, minor therapeutic measures, and operative measures in general. The remaining sections concern affections of the peritoneum and cellular tissue, pelvic hæmatocele and hæmatoma, affections of the Fallopian tubes, affections of the ovaries, affections of the uterus, displacements of the uterus, fibro-myoma uteri, carcinoma uteri, affections of the vulva, injuries and displacements of the pelvic floor, affections of the vagina and hymen, affections of the urethra and bladder, certain affections of the rectum.

The illustrations have been chosen with special reference to their teaching value, and have, for the most part, been made from original drawings by the author (*Preface*).

The third chapter—on the pelvic peritoneum and connective tissue—deserves careful perusal, for here the writer controverts—we think, on the whole, successfully—the commonly accepted views concerning the pelvic floor, especially those associated with the names of Hart and Symington. Relying on original, mostly dissectional, investigations, Dr. Webster demonstrates the prime importance of the various layers of the pelvic connective tissue in supporting and maintaining the relative positions of the pelvic organs. He returns to the attack in the section on prolapse of the uterus, which, conformably to his theory, he ranks under displacements of the pelvic floor (Chapter XIX). Readers will value the clear and intelligible account of a subject generally regarded as somewhat obscure.

Dr. Webster is inclined to attach great importance to the rôle of reflex neuroses in pelvic disease. He makes bold to say that, "taking all sorts and varieties of dysmenorrhœa into consideration, it is *the* factor which is most common to all, which requires most careful attention, and in many cases sole attention" (p. 141); and he reasserts this view even in the chapter on pyosalpinx, observing (p. 354) that it has been noted in a good many cases that the patient is no better after the operation (oöphoro-salpingectomy). While fully admitting the existence of neurotic conditions, we think the first statement exaggerated and the second based on a faulty inference. Operation is often unsuccessful, not because a neurotic condition is overlooked, but because our author's *mechanical gynecologists* frequently fail to perceive that in a given case their task is not to perform one or other of the so-called typical

gynæcological operations, but to *remove the disease*. A double pyosalpinx may be excised, and the patient remain as before, or gradually sink into neurotic invalidism. It is more than likely, however, that she is simply continuing to suffer from an infective metritis, which, by a process closely allied to chronic septicæmia, reduces her to her abject condition. On the other hand, in the success which often attends the isolation treatment (with massage, &c.), the *a thoro* element is probably quite as important as the *a mensu*.

The section on inflammation of the uterus is the least satisfactory in the book. Too little is made of gonorrhœa, and the distinction between bacterial and non-bacterial endometritis is not sufficiently emphasised. It would be better, too, if diseases of the Fallopian tubes were considered in conjunction with or immediately after those of the uterus, for these structures are really one organ. The chapter on displacements of the uterus is commendable for its brevity and its sanity, and the same may be said of the paragraphs on menstrual anomalies in the chapter on puberty. It is, indeed, one of the features of the book that the space allotted to a subject is determined by its importance. The principle of proportional values is everywhere observed.

The paragraphs relating to the diagnosis, prognosis, and treatment of the various affections are carefully written, particular attention being given to therapeutic details. Operative measures are judiciously discussed, and a tight rein kept on those fantastic manœuvres which have bewitched the gynæcological world, whose merit mainly consists in the ease with which they are devised and the facility of their execution.

Readers will probably turn with expectancy to the explanation of menstruation offered in the appendix. The chapter must be read in its entirety before one can fully appreciate the point of view and general argument adopted by Dr. Webster. His conclusions, briefly, are:—The menstrual function is a highly specialised means, gradually produced, in the evolution of the highest mammals, by which the two great factors in tissue metabolism—the anabolic and katabolic—are properly balanced. The rhythmical character of the menstrual function has probably been gradually determined by the forces of evolution, and the marked range of variations which it presents in the human female (unassociated with pathological conditions) points very strongly to an early period of irritability in the process, preceding its present fairly fixed habit. It is, indeed, impossible for us to think of a rational explanation for the peculiarities which are found except on the ground of

biological variations—atavistic reminiscences. The menstrual function, then, being closely correlated with the well recognised sexual characters, is, like them, undoubtedly closely related to a nervous regulating mechanism, the nature of which is unknown as yet (pp. 666, 667). The relation of the uterus to the ovary "is that of two separate departments of an army, each of whose work must be thoroughly accomplished before the one common object can be attained. They are both controlled by branches from the sympathetic system, and instead of their actions being determined by each other, their orders come from that higher power which controls all functional activity."

A noticeable feature of the book, for which we are grateful, is the absence of references. In the copious index which completes the work, there is no mention of sterility; the discretion of the author is equally shown in what he has omitted. The publisher has done his part well. The typography is good; the illustrations are excellent. Clerical errors are so few that it seems ungracious to refer to them. We cordially recommend the book to all students and practitioners of medicine.

Transactions of the Obstetrical Society of London. Volume XXXIX: Part IV (October, November, and December, 1897).

In this part of the London Obstetrical Society's *Transactions* there appear four papers of special interest and importance.

1. "On the Management of True and False Capsules in Ovariectomy," by Mr. Alban Doran. False capsules the author divides into two classes—(a) the false capsule "that consists of inflammatory deposit, mesentery, and omentum;" (b) the false anatomical capsule formed by the layers of the broad ligament separated in its lowermost part. True capsules the author describes as those formed "by the mesosalpinx," "the lower part of the broad ligament not being opened." The treatment of the false capsule is simply separation of the adhesions. The management of the false anatomical and true capsule is discussed under the three heads—(1) "Should the capsule be cut away?" (2) "Should it be let fall back into the pelvis?" (3) "Should it be stitched to the abdominal wound?" Conclusions of author are that first method should be adopted when possible and if capsule healthy, second when first impossible and capsule healthy, third when capsule shows advanced inflammatory changes associated with suppuration

of tumour. Author also reports a case where last method was adopted, and sac plugged with iodoform gauze; iodoform poisoning occurred. Symptoms of such an occurrence are referred to.

2. "On Abdominal Hysterectomy for Myoma of the Uterus, with brief notes of Twenty-eight Cases," by Mr. J. Bland Sutton. The author does not recommend pan-hysterectomy, chiefly because of the danger of injuring the ureters when the cervix is removed. The stump is treated subperitoneally, and when possible the tubes and ovaries are left behind. A short synopsis of each case is given. Two of the patients died. The discussion of the paper by the Fellows of the Society, to judge by the report, was as animated as it was interesting.

3. "Three Cases of Pyometra complicating Cancer of Cervix Uteri," by Dr. W. H. Tate. A full description of these cases is given along with a brief review of previously reported ones. Some conclusions arrived at are the following:—It occurs in about 6 per cent of cases of carcinoma of cervix. It is more common when the disease attacks the organ some time after the menopause. The pus that escapes is extremely foetid. The removal of the uterus is difficult, and the danger of septic peritonitis supervening great. The author strongly advocates the non-closing of the vault of the vagina after removal of uterus in all cases of vaginal extirpation of the organ. All the author's cases recovered.

4. "The Obstruction of Labour by Ovarian Tumours in the Pelvis," by Dr. B. G. M'Kerrow. This paper is an analysis of 183 reported instances of this complication, along with two described for the first time by the author. The various methods of treatment are discussed. A carefully prepared table, giving a brief summary of all these 183 cases and the treatment adopted, accompanies the paper.

Besides these papers referred to, many other most interesting cases are reported, but space unfortunately does not permit of a description.

Medical Diagnosis. By J. J. GRAHAM BROWN, M.D. Fourth Edition. Edinburgh: William F. Clay. 1897.

THERE are now so many excellent books on medical diagnosis that one tends to look on even a "new edition" as *de trop*. That, however, cannot hold in regard to the work at present before us, which, for its size and scope, is one of the best on the subject that we know of.

This new edition has been brought quite up to date, and, indeed, there is very little throughout its pages to which one can take much exception. We might possibly suggest that in the chapter on the blood, the author does not throw much light on the "confusion as to the nomenclature of the different forms of leucocytes." What exactly does he mean by a "myelocyte," and what is its relation to the "hyaline" and the "coarsely granular basophile cell?" We were not aware that corpuscles which could be called "myelocytes" are to be "seen in the blood in large numbers in cases of pernicious anæmia." We think, too, that white blood corpuscles are better stained by eosine and methylene-blue than by Erlich's stain.

An error is noted on p. 406, where it is stated that the "graphic-motor centre" lies in the third left frontal convolution. The adjoining diagram shows the true version—the centre in the second frontal convolution.

We think that in dealing with the "sensory functions" some indication should have been given of the course of the various sensory fibres—*e.g.*, in the spinal cord. Without a knowledge of this the student cannot localise the lesion which produces loss of the senses of pain and temperature, while that of touch remains intact.

The style of the book is clear and incisive, and, indeed, quite one of its charms. A word must likewise be said in praise of the numerous illustrations throughout the text.

Essentials of Experimental Physiology. By T. G. BRODIE, M.D. London: Longmans, Green & Co. 1898.

THIS book, containing two hundred and twenty-six pages, forms a suitable companion volume to the *Essentials* of Professors Schäfer and Halliburton, with which it is uniform in size and appearance. The arrangement of the work is based on the syllabus issued to members of the class of advanced practical physiology held at King's College by Prof. Halliburton. The diagrams, numbering one hundred and seventy-seven, many of which are new, include numerous reproductions of tracings which are altogether new, and taken from tracings specially executed for this work. Plate II, showing a tracing of the blood-pressure and respiratory movements during asphyxia, excels anything we have seen in works of this class.

The greater part of the book is devoted to the electro-

physiology of nerve and muscle. We think that the space of eight pages allocated to the eye is somewhat scant; Priestly Smith's perimeter is figured, but there is no notice taken of M'Hardy's instrument, a much more easily and accurately wrought apparatus. A lesson on Frost's artificial eye might have been included with advantage. There is no mention of the stethoscope or laryngoscope—an exercise on these instruments would have been beneficial to junior students.

The work is clearly written, the descriptions of experiments being particularly lucid, more so than in several other works of this class. The account of the more fundamental experiments, of primary importance to beginners, is printed in bolder type than the other parts of the book.

On the whole, we are highly pleased with the book. We are of opinion that it will be of undoubted service to students preparing for the higher examinations in physiology. To all such we heartily commend it.

Autoscopy of the Larynx and the Trachea. By ALFRED KIRSTEIN, M.D., Berlin. Translated and Enlarged by MAX THORNER, A.M., M.D., Cincinnati, O. Philadelphia: The F. A. Davis Co. 1897.

THE method which has been misnamed "Autoscopy of the Larynx" must be already known to the regular readers of current medical literature, and we regret that our notice of this book has been inadvertently delayed. Dr. Kirstein, to whom we are indebted for the conception and development of autoscopy, describes here its technique, and stoutly defends its claims against would-be detractors. This method, which might more appropriately be termed orthoscopy, allows of direct inspection of the lower pharynx, the larynx, and the trachea, when the base of the patient's tongue is drawn downwards and forwards by means of a special depressor. The advantages of a direct view of the interior of the larynx, and of being able to manipulate in this region without the intervention of a mirror, are manifest. Unfortunately this ideal method is impracticable in many persons from anatomical causes. The author, with his great experience—and considerable practice is required by all who desire to obtain dexterity—succeeds in getting a good view of the posterior wall of the larynx in about two-thirds of all his cases. We ourselves can testify to the value of Kirstein's procedure in examining and

treating disease in the posterior parts of the larynx, and we think that its future application will be chiefly in this direction. When the morbid condition is situated more anteriorly, however, the laryngoscope will be almost always indispensable. Dr. Thorner's translation is excellent.

Injuries and Diseases of the Ear. By MACLEOD YEARSLEY, F.R.C.S. London: The Rebman Publishing Co., Limited. 1897.

THIS little book contains half a dozen papers which have already appeared in medical journals. The subjects dealt with are:—On an Artificial Membrana Tympani; Foreign Bodies in the Ear and their Treatment; What not to do in Diseases of the Ear; The use of the Pneumatic Aural Speculum; On the Care of the Ear in Children; and Aural Reflexes. These papers are written in a clear and pleasant style, and general practitioners will find in them useful advice. We would take exception to one or two of the examples of aural reflexes described, believing that other explanations are more probable.

Selected Essays and Monographs. Translations and Reprints from Various Sources. London: The New Sydenham Society. 1897.

THE Sydenham Society is to be congratulated upon the selection of essays and monographs contained in this volume. The essays cover a wide range of subjects, mostly of great pathological and clinical interest, though necessarily of varying importance. Of first-rate importance among them we would place Bruhl's contribution to the Study of Syringomyelia, and, from the historical point of view, Maxwell's Observations upon Yaws. The first of these papers is remarkable for the minuteness of its detail, and the second has been greatly enhanced in value by the addition of coloured plates from Hutchinson's collection. We have read with interest Fournier's paper on Syphilis and General Paralysis. On the whole we have not been much impressed with his arguments in favour of the preponderating etiological significance of syphilis in the production of general paralysis. It is the paper of a syphilographer through and through, and lacks the

breadth of view necessary to the discussion of the subject. There are two essential weak points in the thesis—the one is the use of the term “pseudo-paralysis,” the other is the inclusion of general paralysis among the so-called “para-syphilitic disorders.” The use of such terms are, in the sense they are here employed, mere covers for ignorance; they tell us nothing that we did not know before as well as Fournier can tell us; they serve to obscure the broad and philosophic issues involved in the discussion of the question; and they convey a meaning, if we may say so a *pseudo-knowledge*, which is quite at variance with the true scientific spirit. We have the same objections to the term Para-syphilitic Epilepsy, the subject of another paper: It is only a syphilographer—and Fournier is one of the greatest, to whose labours we owe much—who could thus read syphilis into the etiology of such diseases in a manner that would never suggest itself to the general physician. We commend the study of the articles to our readers for the novelty, if not for the scientific value, of the views they propound.

Transactions of the Royal Academy of Medicine in Ireland, Vol. XV. Edited by JOHN B. STORY, M.B., F.R.C.S. Dublin: Fannin & Co. 1897.

THE present volume testifies to the vigour of the Dublin school. As a sign of the times we note that two of the communications are by a woman, Dr. E. Winifred Dickson.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

NERVOUS DISEASES AND INSANITY.

BY DR. R. S. STEWART.

Cheyne-Stokes Respiration of absolutely regular cycle with Modifications of the Pupils parallel to the Respiratory Movements, and regularly intermittent Anæsthesia of the Face in the whole sphere of the Trifacial. By Terrien (*Le Progrès Médical*, 8th January, 1898).—The case here recorded, that of a man of 64 suffering from cerebral and cardiac disease, presents some very interesting

peculiarities. For three and a half years he suffered from paroxysms of dyspnoea, with rapid, laboured, and noisy respirations without appreciable respiratory pause, and during the last six days of his life there was established a very complex and curious Cheyne-Stokes type of respiration, curious for its absolute regularity of rhythm (a series of increasing and diminishing respirations lasting invariably from thirty-nine to forty seconds, with a respiratory pause of twenty seconds), for the long duration of the phenomenon (incomplete Cheyne-Stokes for three and a half years, complete for six days), for the facility with which the patient bore this kind of respiration (the only complaint was of slight fatigue and occasional vertigo), and for the accompanying pupillary and sensory phenomena.

Contraction of the pupils during the apnoea and dilatation during the dyspnoea have been noted in cerebral hæmorrhage and other cases, but this phenomenon was peculiarly striking in this case; a pupil varying from a needle-point to a circle equalling the iris, and this progressing so absolutely parallel with the respiratory movements that without observing the thorax it was possible to say at what precise period of the respiratory cycle the patient had arrived. After a period of respiratory arrest, a slight trembling of the pupillary point became observable, then a scarcely perceptible increase. From this moment when the first faint inspiration occurred and with the deepening inspirations the pupil increased in size until it attained its maximum exactly at the time of fullest respiration, again to diminish with the declining respiration to its punctiform condition.

Along with this and following the same rhythmical course, there was this other phenomenon, not hitherto observed, an anæsthesia of the face with abolition of the oculo-palpebral and nasal reflexes during the respiratory pause.

Tennier is of opinion that the theory advanced by Traube as regards Cheyne-Stokes respiration supplies the explanation for the two other concomitant phenomena, the cilio-spinal and the sensory nucleus of the trifacial being situated in the neighbourhood of the respiratory centre beneath the floor of the fourth ventricle.

Experimental Researches on Eosine. By Goff and Sainton (*Le Progrès Médical*, 22nd January, 1898).—The administration of this substance produced in frogs and dogs paralysis of the hind legs and gastro-enteric intolerance. From the fact that each molecule contains four atoms of bromide it was thought that it might have some beneficial influence in epilepsy, but its administration to the extent of 2 grammes per day to two epileptics was unproductive of any result.

The Alkalinity of the Blood and Injections of Alkaline Solutions in Epileptics. By Charon and Briche (*Archives de Neurologie*, December, 1897).—Conclusions: In epileptics the degree of alkalinity of the blood undergoes in the course of each quotidian revolution constant variations, with maxima and minima in relation to the conditions of digestive work. The convulsive attacks present numerical variations equally constant, isochronous, and in inverse relation to the variations of the alkalinity of the blood. Repeated injections of alkaline solutions do not modify in any permanent fashion the degree of blood alkalinity. They produce only a very temporary elevation of this degree of alkalinity, an elevation which disappears an hour after the injection, and during which no attacks have occurred. The injections result in a diminution of the number of isolated attacks, and provoke their occurrence in groups. They do not diminish the total number of attacks, but, if anything, rather increase them. They generally aggravate the psychical troubles, and in certain cases provoke post-paroxysmal outbreaks of maniacal excitement.

General Paralysis. By Paris (*Archives de Neurologie*, February, 1898).—There is a very prevalent disposition of late years to regard syphilis as the cause of general paralysis, a view which this writer is unable to accept, and

in support of his contention he cites the following objections. If heredo-syphilis is the cause of general paralysis, as is asserted, how comes it that general paralysis should be much more rare in women than in men, while syphilitics have as many, if not more, female descendants than male. The cases of heredo-syphilis are met in all ranks of society, whilst general paralysis is extremely rare, almost exceptional, among women privileged by fortune.

Syphilis is in a general fashion more grave in women than men; woman is more subject to gummata, necroses, sunken nose, frontal perforations, &c., while indelible and marked traces of grave syphilis are not found in general paralysis. Syphilis being habitually graver in women than men, it is very singular that general paralysis, if really of syphilitic origin, should be of shorter duration in men than in women. In Normandy (where the observations were made) only a minimum number of general paralytics occur, and, the writer asks, is there much less syphilis in Normandy than in other regions?

Myxœdema-like conditions in the Negro. By Berkley (*American Journal of Insanity*, January, 1898).—The existence of myxœdema in the negro race has been denied, but this writer found in an asylum containing from three hundred to four hundred negroes eight cases presenting a peculiar thickening of the skin, local in character but identical in all other respects with that present in cases of sporadic cretinism in the Caucasian race, and this was always associated with some departure from the normal in the thyroid gland. Four of these cases were subjected to thyroid treatment, and the disappearance of the thickenings proved conclusively that these jelly-like deposits were of the same nature as that in ordinary myxœdema.

Cyclone-Neuroses and Psychoses. By Bremer.—Many mental and nervous wrecks resulted from the catastrophic cyclone which devastated the city of St. Louis in May, 1896, and Dr. Bremer's paper is an attempt to estimate in a measure the damage to the nervous system of its victims. There was a strong resemblance between the ailments following on the cyclone to those resulting from railway accidents, the characteristic disproportion between the nature, extent, and gravity of the trauma and the seriousness of the nervous disease following. Traumatic hysteria, affecting men as well as women, was the most prominent, though, at the same time, sudden and decided improvements were noted in a number of cases of chronic hysterical invalidism in women, and neurasthenia came next in point of frequency. Among other neuroses evoked by the cyclone were epilepsy, chorea, and paralysis agitans, and another sequel was an unusual prevalence of genuine malaria. Although a dazed somnambulistic condition of mind with amnesia was of common occurrence during the disturbance, the occurrence of actual insanity attributable to the cyclone was not a noteworthy feature until at least after a considerable lapse of time.

MEDICINE.

By WALTER K. HUNTER, M.D., B.Sc.

Tabes Dorsalis.—Prof. Raymond, in a lecture last autumn at the Salpêtrière, recorded two cases which seem worthy of some notice. The patients, a father and his son, were both affected with ataxy. The father presented the symptoms and signs of a typical case of tabes dorsalis. There was inco-ordination in the arms and legs, Romberg's sign, atrophy of both optic discs, loss of light reflex, paralysis of some of the muscles of the eyeball. Sensory disturbances were likewise present—incomplete anaesthesia of left arm, of the trunk, and of both legs. The tendon reflexes were gone, and there was incontinence of urine. Some years previous to the onset of the above symptoms the patient experienced several slight apoplecticiform seizures,

followed by some left-sided hemiplegia of short duration. There was also a paralysis of the sixth left cranial nerve, of much longer duration than that of the other eye symptoms.

Patient's father was an alcoholic, his mother healthy. He had a niece who developed paraplegia at the age of 18. He is the father of four children, three of whom are quite healthy; the fourth is the case we next consider.

This son, aged 16, like the father, suffered from ataxy, but with him (the son) the symptoms and signs were rather those of Friedreich's ataxy than of the locomotor ataxy of childhood. There were no preataxic symptoms, *e.g.*, in the way of sensory disturbances, for the staggering gait was the first sign to show itself. There was affection of speech, tremor of the tongue, tremor of the head, arms and legs, also nystagmus. In addition to inco-ordination of the arms, there was the hovering over an object before it could be touched. Tendon reflexes were absent, and a scoliosis was to be noted in the dorsal region. Besides these phenomena just mentioned, there was to be noted impairment of sensation in certain areas, loss of the light reflex, and double optic atrophy of the type seen in locomotor ataxy—all signs not usually met with in Friedreich's disease.

In discussing these two cases, Prof. Raymond considers the possibility of the second being a case of infantile locomotor ataxy. This term he applies to cases of locomotor ataxy which, while developing during childhood and adolescence, do not differ in their features or evolution from the tabes of the adult. Such locomotor ataxys are very rare. Prof. Raymond has never met with one, and in literature he can find the records of only six undoubted cases. He does not think the case we have just considered may be classed as such, neither does he think it certainly a case of Friedreich's disease. He says it is a "hybrid," with some of the characters of both these conditions. A certain number of such have been put on record.

The question as to the disease having been transmitted from the father to the son is also discussed. Cases do exist where there would seem to have been a direct transmission. They are, however, very rare; and in view of the dissimilarity in many of the symptoms in the father and son, Prof. Raymond considers that the latter has not inherited tabes from the former, but rather an enfeebled nervous system with tendency to degeneration.—(*Le Prog. Méd.*, 7th and 14th August, 1897.)

The Pathology of Muscular Rigidity.—MM. Philippe and Cestan have examined the medulla and cord in four cases of infantile spasmodic paraplegia (Little's paralysis), and in none of them did they find sclerosis of the pyramidal tracts. These observations argue strongly against the theory that muscular rigidity is due to sclerosis of the pyramidal tracts, for they show that the rigidity of Little's disease may exist without any such sclerosis. The authors suggest that the essential lesion of infantile rigidity lies rather in the ganglion cells of the anterior cornua of the cord, as Charcot said as far back as 1874.—(*Soc. de Biol.*, reported in *Le Prog. Méd.*, 25th December, 1897.)

The Gonococcus a cause of Endocarditis.—At a meeting of the Société Médicale des Hôpitaux MM. Rendu and Hallé reported the following case:—The patient, a woman aged 30, complained of pains in the abdomen, but beyond some slight congestion of the os uteri physical examination was negative. Each day, however, there was shivering, and the temperature reached 103° F. Cultures were taken from the cervix uteri, with the result that a pure growth of the gonococcus was obtained. Three weeks after admission to the hospital a diffuse inflammation developed round the left shoulder-joint, and the pus which formed likewise contained gonococci. In spite of treatment patient got worse, the fever continued, and profuse perspirations set in. A fortnight after the appearance of swelling in the shoulder, signs of endocarditis and pericarditis presented themselves. The patient died a week later. *Post-mortem* examination showed recent inflammation of the aortic valves, and the gonococcus in large quantity was found

among the exudation. Cultures taken from the pericardial fluid, pleural fluid, and the blood remained sterile. The spleen was somewhat congested, but the genital organs showed little abnormal.—(*La France Méd.*, 19th November, 1897.)

PHYSIOLOGY.

By WILLIAM SNODGRASS, M.A., M.B., C.M.

Chemistry of Hæmoglobin.—Haldane (*Journal of Physiol.*, 17th February, 1898) describes a simple method for rapidly demonstrating the amount of oxygen absorbed by blood. "When ferricyanide is added to solution of oxyhæmoglobin or carbonic-oxide-hæmoglobin the gas combined with the hæmoglobin is set free and froths off, while methæmoglobin is formed. By taking advantage of this reaction the volume of gas capable of being absorbed by the hæmoglobin of the blood may be rapidly and accurately determined without the use of the blood-pump. Although methæmoglobin yields no oxygen to a vacuum, it parts with its oxygen to reducing substances far more readily than oxyhæmoglobin does."

The Tension of Oxygen in Arterial Blood.—J. L. Smith (*Journal of Physiol.*, February, 1898) finds that the tension of oxygen in arterial blood leaving the lungs is lowered to about that of the alveolar air by the general pathological processes which ordinarily occur in fever, and, in particular, by rise of body temperature, and by toxic agents of bacterial origin. There is an interference with absorption through the lung epithelium. Absorption of oxygen by the lungs is an active physiological process, and cannot be explained as due simply to diffusion.

Central Thermic Polypnoea.—In 1866-67 Ackermann demonstrated a marked acceleration of the rate of respiration in animals submitted to the action of heat. In 1884, Ch. Richet found that central polypnoea appeared in intermittent phases when the temperature of the animal was about 41° C., became continuous and regular at 41·7°, and attained its maximum frequency between 42·5° and 43°. This polypnoea assisted in regulating the body temperature by increasing the exhalation of aqueous vapour. J. Athanasia and J. Carvallo (*Archives de Physiol. Norm. et Patholog.*, January, 1898) have investigated the physiological mechanism of this polypnoea, and find that it is not to be attributed either to excessive accumulation of CO₂ or to deficiency of oxygen in the blood. The proportions of these gases in the blood at the beginning of the phenomenon are the same as the normal. Polypnoea does not cease if the animal is made to breathe an atmosphere rich in oxygen, nor is it due to the action of noxious substances formed by the organism under the influence of heat. Heat is the essential cause, and acts directly on the respiratory nerve centres.

The Mechanism of the Destruction of the Active Principle of the Suprarenal Capsules in the Organism.—The elevation of blood-pressure seen after injection of extracts of suprarenal capsules into the veins of warm blooded animals is always of a transient nature, not lasting, as a rule, more than three minutes. The duration of the phenomenon is independent of the quantity of material injected. P. Langlois (*Archives de Physiol. Norm. et Patholog.*, January, 1898) finds the rapidity of disappearance to be a function of the activity of tissue metabolism. In the normal tortoise the action on the heart may persist for three hours; in the heated tortoise it disappears in about twenty minutes. Oxidising agents destroy the active principle *in vitro*. In the organism the destruction of the substance is mainly brought about in the liver. Macerated hepatic tissue attenuates the activity

more than macerations of other organs. A feeble dose sufficient, when injected into the general venous circulation, to increase notably the blood-pressure, will when injected into the mesenteric vein produce no effect. In an animal under the influence of the extract the blood of the hepatic vein is less rich in the active substance than the blood of any other region. The suppression of the hepatic circulation causes a prolongation of the period of hypertension.

The Fixation of Enzymes by Fibrin.—The power fibrin has of fixing pepsin was shown by v. Wittich some five and twenty years ago, and this property of fibrin has long been utilised in extracting enzymes from fluids, and more especially from urine. Szumowski (*Archiv. de Physiol. Norm. et Patholog.*, January, 1898) has made an elaborate investigation on the subject, and finds that fibrin plunged into aqueous solutions of the enzymes, pepsin, rennin, the diastase of malt, invertin, emulsin, ptyalin, and tripsin has the property of fixing part at least of the enzyme or enzymes present. The fibrin thus charged with enzyme will yield it readily to water, and more slowly to glycerine. The fibrin charged with enzyme will speedily digest itself when placed in a suitable acid or alkaline fluid.

Books, Pamphlets, &c., Received.

Disease of the Nervous System: a Handbook for Students and Practitioners, by Charles E. Beever, M.D. (Lond.), F.R.C.P. With Illustrations. London: H. K. Lewis. 1898. (10s. 6d.)

Idiopathic Ulcerative Colitis (Dysentery), by James F. Gemmel, M.B. London: Baillière, Tindall & Cox. 1898. (12s. 6d.)

Oral Surgery: a Text Book of Diseases of the Mouth, intended chiefly for the Use of Students of Dentistry, by Edmund W. Roughton, B.S., M.D. (Lond.), F.R.C.S. (Eng.) With Sixty-four Illustrations. London: J. P. Segg & Co.

Trewinnot of Guy's, by Mrs. Coulson Kernahan. London: John Long. 1898. (6s.)

The Diseases of the Lungs, by J. Kingston Fowler, M.A., M.D., and Rickman John Godlee, M.S., F.R.C.S. With One Hundred and Sixty Illustrations. London: Longmans, Green & Co. 1898. (25s.)

Transactions of the Nineteenth Annual Meeting of the American Laryngological Association, Washington, May, 1897. New York: D. Appleton & Co. 1898.

**GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR
THE FIVE WEEKS ENDING 26TH MARCH, 1898.**

	WEEK ENDING				
	Feb. 26.	Mar. 5.	Mar. 12.	Mar. 19.	Mar. 26.
Mean temperature, . . .	37·1°	38·3°	41·2°	45·4°	41·0°
Mean range of temperature between day and night, .	14·8°	11·1°	14·2°	10·9°	13·0°
Number of days on which rain fell,	2	4	4	7	2
Amount of rainfall, . ins.	0·75	0·51	0·17	0·66	0·7
Deaths registered, . . .	289	338	375	368	349
Death-rates,	20·7	24·3	26·9	26·4	25·1
Zymotic death-rates, . .	3·4	3·9	3·9	3·7	3·5
Pulmonary death-rates, .	6·0	7·8	9·0	8·3	8·2
DEATHS—					
Under 1 year,	64	70	87	96	73
60 years and upwards, .	54	52	71	68	69
DEATHS FROM—					
Small-pox, . . . . .	...	...	...	...	...
Measles,	14	18	16	16	21
Scarlet fever,	7	4	3	2	2
Diphtheria,	1	1	2	3	1
Whooping-cough, . . .	11	19	19	19	19
Fever,	5	3	4	3	3
Diarrhoea,	9	10	11	9	3
Croup and laryngitis, .	5	1	...	1	5
Bronchitis, pneumonia, and pleurisy,	60	74	96	83	89
CASES REPORTED—					
Small-pox, . . . . .	...	...	...	...	...
Diphtheria and membranous croup,	7	10	7	12	9
Erysipelas,	16	18	13	21	25
Scarlet fever,	77	45	73	55	63
Typhus fever, . . . . .	...	1	1	...	...
Enteric fever,	11	13	12	13	17
Continued fever, . . .	...	...	...	...	...
Puerperal fever, . . .	1	2	2	2	1
Measles,*	306	461	311	418	414

* Measles is not notifiable.

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ORIGINAL ARTICLES.

ON WHITE BLOOD CORPUSCLES.¹

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EVER since the invention of the microscope, white blood corpuscles have been among the objects of greatest interest to the histologist, and at no time has this been greater than at the present. Indeed, for some years past, white blood corpuscles have held pre-eminence over all other cellular elements; for has it not been shown how it is they that constitute the army on which our bodies depend for defence against that most relentless foe, the pathogenic micro-organism? It is true that much of the enthusiasm shown in these blood corpuscles has expended itself in theorising as to the nature of their weapons and their methods of warfare; but, besides this, many valuable observations have been made as to their composition, minute structure, and life history, and it is this aspect of the subject we have now to consider.

¹ Read at a meeting of the Glasgow Medico-Chirurgical Society held on 1st April, 1898.

As far back as fifty years ago it was recognised that there were present in the blood several varieties of leucocytes, differing from one another in their size, shape of nucleus, and in having a hyaline or granular plasma. But it was not till Ehrlich published his researches (1878-87) that anything like a definite classification could be laid down; for Ehrlich's classification took note, not only of the morphological characters of the corpuscles, but also of their chemical affinities for certain of the aniline dyes. We know that the aniline dyes can be divided, according to their reaction, into two groups:—(1) The "acid" dyes, and (2) the "basic" dyes. Though called "acids" and "bases" these pigments are in reality not so, for, from their chemical composition, they are salts. But in the "acid" dye it is the acid part of the salt that is the staining element, while with the "basic" dye, it is the basic part that stains; and this is why they are called "acid" and "basic."

Now, Ehrlich found that the granules of certain leucocytes would stain with an "acid," but not with a "basic" dye, their granules were what he called oxyphile; but, on the other hand, there were corpuscles whose granules only stained with "basic" dyes, these he called basophile. And so he classified the white blood corpuscles according to the staining reaction of their granules. He likewise compounded a "neutral" stain made up of an "acid" and a "basic" stain, and he maintained that in certain corpuscles the granules were neither oxyphile nor yet basophile, but neutrophile. This, however, has since been proved to be incorrect, for it has been shown¹ that a truly neutral dye does not stain these granules at all, and that it was really the acid element of Ehrlich's neutral stain that was doing the staining.

But not only do the granules of the various kinds of corpuscles have a special affinity for certain dyes, they also stain with these dyes in different degrees of intensity. This is well illustrated in staining the nuclei of the different kinds of leucocytes, and by those corpuscles that contain oxyphile granules. The staining power of the dye, moreover, depends on the nature of the solvent used. Eosine, for example, stains much better in aqueous than in alcoholic solutions, and some oxyphile granules which stain with watery solutions of eosine will not stain with alcoholic solutions of that dye. We have in this, therefore, another factor in the classification of leucocytes, for we distinguish those corpuscles whose granules stain

¹ Kanthack and Hardy, *Journal of Physiology*, vol. xvii.

with all solutions of eosine as being strongly eosinophilous, from the ones whose granules only stain with watery solutions of eosine, and which are therefore faintly eosinophilous. It is also to be noted that heat increases the intensity of a stain, presumably because it renders it more soluble, and therefore a more completely saturated solution.

With a view then to examine the properties of a white blood corpuscle in regard to its reaction with the aniline dyes, it is customary to "double" stain it, using both an "acid" and a "basic" dye; and as eosine and methylene blue are respectively good examples of such stains, they are the pigments most commonly used for this purpose. In staining white blood corpuscles, then, one proceeds as follows:—A small drop of freshly drawn blood is allowed to spread itself out between two cover-glasses, which are immediately thereafter slid apart one from the other. The films are allowed to dry at the temperature of the room, and when dry, fixed by passing the covers through the flame of a Bunsen burner. But as this does not seem to fix all the elements of the corpuscle, it is well to now place the covers for a few minutes in alcohol—a 70 per cent solution I find answering the purpose quite well. On removal from the alcohol the preparations are allowed to dry, and then placed for a few minutes in a solution of eosine.¹ They are next thoroughly washed in water, allowed to dry, and again fixed in the flame. They are then placed for a few minutes in the methylene blue solution,² next washed, dried, and mounted in Canada balsam.

We are now in a position to consider the more intimate structure and varieties of the different leucocytes that have been met with in the blood. But, in the first place, there is a difficulty in terminology, for each writer on the subject seems to have his own classification and his own special names for the different kinds of corpuscles. I shall therefore, for the sake of clearness, give, in tabular form, the classifications of four of the more prominent writers—Ehrlich, Metschnikoff, Kanthack, and Gulland.

These are as follows:—

¹ I use the following solution:—Eosine, 1 grm. ; rectified spirit, 40 c.c.; water, 160 c.c.

² Löffler's solution does admirably.

EHRLICH.	METSCHNIKOFF.	KANTHACK.	GULLAND.
Eosinophile cell (granulation α).	Eosinophile.	Coarsely granular oxyphile.	Eosinophile.
Neutrophile (granulation ϵ).	Polynuclear.	Finely granular oxyphile.	Oxyphile.
Lymphocyte.	Lymphocyte.	Lymphocyte.	Lymphocyte.
Mononuclear, finely granular basophile (granulation δ).	Mononuclear.	Finely granular basophile.	Small basophile finely granular.
		Hyaline.	{ Small hyaline. Large hyaline.
Amphophile (granulation β).	...	...	...
Mastzellen (granulation γ).	...	Coarsely granular basophile.	Large basophile coarsely granular.

As to the above classifications, then, we may say with confidence, that not one of them is perfect, for no classification ever is; but for purposes of description they are convenient, and as these four differ less in their groupings than in terms, we may keep all of them before us while we consider in detail the various corpuscles with which they are concerned.

The first group in all four lists comprises the *coarsely granular oxyphile*, or *eosinophile* corpuscle of granulation α , and as it has well-defined characters there is little difficulty in its recognition. The eosinophile corpuscle has a diameter of from 10 to 11 μ . Its nucleus, which takes the form of a bent bar or sometimes of a horse-shoe, contains a distinct nuclear network, and it stains rather less deeply than the nucleus of the polynuclear corpuscles. The cell plasma seems to be transparent, and it is filled with large, coarse, well-defined spherical granules, of high refractive index, which stain intensely with eosine, even in strong alcoholic solutions. These granules contain no hæmoglobin, nor are they fatty granules: they seem to be albuminoid in composition, and in that respect related to the nucleus of the cell. The eosinophile corpuscles possess amœboid movement, but they are not phagocytic. They are rare in normal blood (2 to 4 per cent of all the leucocytes), but are found in greater abundance in the cœlomic fluid, in areolar tissue, in red bone marrow, and in the blood in cases of speno-medullary leukæmia.

The second corpuscle to consider is the *finely granular oxyphile* leucocyte, which is, without doubt, identical with the "*polynuclear*," and the "*neutrophile*" cells of granulation ϵ . It is rounded in shape, measuring from 8 to 9 μ . Its nucleus is very irregular in outline, often forming several little portions, connected by fine filaments, and it contains a close network of fibres which stain deeply with methylene blue. The plasma is clear though faintly oxyphile, and it contains a fine granulation which is likewise feebly oxyphile—*i.e.*, which only stains with eosine in weak alcoholic or watery solutions. This is the most common leucocyte found in the blood, forming about 75 per cent of those present. It is phagocytic and actively amœboid.

As to the *lymphocyte*, there is little difference of opinion either as to its structure or function. It is a small round cell, measuring 6 μ in diameter, and it has a deeply staining nucleus which fills up almost all the cell. The narrow margin of plasma surrounding the nucleus seems to be hyaline, and like the nucleus, it stains with basic dyes, though much less intensely. The lymphocyte has no amœboid movement and it is non-phagocytic. It forms from 15 to 25 per cent of all the leucocytes in the blood, being increased after food and lessened with starvation. It is doubtless formed in the various lymphoid tissues scattered throughout the body.

With these three kinds of leucocytes, the eosinophile, polynuclear, and lymphocyte, there is little difficulty in their designation or classification, for they each have well-defined characters, and are, therefore, easily identified. It is true that in bone marrow and in the blood of some cases of leukæmia, we find gradations between the two former, where the question may arise as to whether the corpuscle is finely granular or coarsely granular; but the eosinophile and polynuclear corpuscles, as we meet with them in normal blood, have scarce any resemblance, and there is no difficulty in distinguishing them.

But with those corpuscles which yet remain to be considered—the basophile cells—the task of description and classification is much more difficult; for one finds all gradations, both in regard to the size of the cell and the condition of its plasma, between the lymphocyte and hyaline cell on the one hand, and between the lymphocyte and coarsely granular basophile cell on the other. With so many intermediate forms, then, one cannot do more than describe certain types from amongst them; and it is with this reservation that we proceed to consider these basophile cells.

The first of them to describe is the *hyaline* cell—the *mononuclear leucocyte* or *macrophagocyte* of Metschnikoff. It measures from 8.5 to 10 μ in diameter. Its nucleus is spherical or kidney-shaped, and shows a fine nuclear network forming comparatively large meshes. This nucleus stains much less intensely than does that of the lymphocyte, probably because in the latter the fibres of the network are much more closely placed together. The plasma of the hyaline cell is abundant, and is described as being "hyaline," but it is not so, for with a high power it can be seen to contain fine basophile dots which Gulland¹ says are the "knots" of a very fine network forming the stroma of the cell. The hyaline corpuscle forms about 2 per cent of all the leucocytes in the blood. It is amœboid and phagocytic, and is probably the mature form of the lymphocyte, or at least of some of the lymphocytes, for we have seen all gradations of mononuclear cells may be found ranging between the lymphocyte and the large hyaline cell. The hyaline cell, Metschnikoff² says, develops into the epithelioid and giant cells.

Another form of basophile cell has been described by Kanthack and Hardy³ under the name "*finely granular basophile corpuscle*." It measures 7 μ , being the smallest of the amœboid cells in the blood. It has, they say, a trilobed nucleus, and the clear structureless surrounding plasma (which colours a purple or pink tinge) contains an immense number of minute granules which stain opaque blue or purple. It is said to form from 1 to 5 per cent of all the white blood corpuscles, being most abundant about two hours after a meal, when it is also seen to be most completely charged with its granules.

This, I presume, is the same corpuscle as that of Ehrlich with granulation δ , and as what Gulland would consider an intermediate stage in the development of the large coarsely granular basophile corpuscle. But as far as my observations have gone, that corpuscle has not, as a rule, a trilobed nucleus—it is more often spherical—neither has its plasma a pink tinge, nor yet its granules a purple colour, when stained with methylene blue. I have seen certain polynuclear corpuscles which would almost answer to the description given by Kanthack and Hardy; but then the pink of their plasma and the purple of their granules was certainly due to the eosine of my double stain, for when stained with methylene blue only,

¹ Gulland, *Journal of Physiology*, vol. xix.

² *Comparative Pathology of Inflammation*, 1893.

³ Kanthack and Hardy *Ibid*.

the plasma remained clear. They were, therefore, not basophile corpuscles. It is possible that some of these so-called finely granular basophile cells are transition forms between the lymphocyte and the polynuclear corpuscle; but of this I have no certain evidence, and that such a transition ever takes place, is still a matter of much doubt.

We now come to the *coarsely granular basophile corpuscle* of Kanthack and Hardy; and it seems to be pretty much the same leucocyte as Ehrlich's cell with granulation γ , as the "*mast*" cell (mastzellen), and as the *myelocyte* or marrow cell. It has been described as a large flattened cell, measuring 12μ or more. The nucleus is rounded and stains, as a rule, feebly; but sometimes it is found deeply stained, and this is said¹ to occur in the older cells and in those with more active movement. The plasma of the cell is clear and does not stain with basic dyes, but it is filled with large basophile granules which usually stain much deeper than the nucleus, and sometimes completely hide it from view. This coarsely granular corpuscle is found normally in the connective-tissues and in the cœlomic fluid; but only in the blood in certain morbid conditions, the most notable example being splenomedullary leukæmia. It is non-phagocytic, and as a rule has little amœboid movement.

The above description of this coarsely granular corpuscle seems to be the one commonly accepted by most writers on the subject. It may hold good for those corpuscles as found in the body cavities and connective-tissues—of this I have had no experience; but it certainly does not apply to those corpuscles as found in the blood in all cases of leukæmia, for I can prove an exception. Quite recently I have had the opportunity of examining the blood in two cases of leukæmia, and in both I found the so-called basophile granules to stain, not only with methylene blue, but also with eosine, showing them to be not basophile only, but amphophile; otherwise the corpuscles presented all the appearances characteristic of the marrow cell. When stained with methylene blue only, I could distinguish four different forms of this cell:—(a) A cell similar in appearance to the hyaline cell, but usually containing some slight and indefinite granulation of its plasma. (b) A cell usually larger than the last, but with a deeper stained nucleus (nearly as deep as the nucleus of the polynuclear corpuscles), and a plasma containing distinct granulation, much lighter in colour than the nucleus. (c) Nucleus large, filling the greater part of the cell, and staining faintly;

¹ Gulland, *Journal of Physiology*, vol. xix.

the small ring of surrounding plasma containing deeply stained granules. (*d*) Cells usually rather smaller than those of the last two groups, but with a plasma more or less completely filled with deeply stained granules, which could not be easily distinguished from the nucleus. The granules in this cell were coarser than those of the other groups. Speaking generally of the cells in all these groups, it might be said that the larger the nucleus the fainter did it stain, and the less the amount of surrounding plasma the deeper in colour were its granules.

When similar preparations of this blood were stained with eosine only, it was found that the granules of all the above forms of myelocytes were also faintly oxyphile, *i.e.*, they stained with eosine with an intensity similar to that of the granules in the polynuclear cells, many of which were to be seen in the same field alongside these marrow cells. It is to be noted, however, that the granulation of the marrow cells, though staining the same, was usually much coarser than that of the polynuclear corpuscles.

Other preparations, again, were double stained with eosine and methylene blue, with the result that in those specimens where the fine oxyphile granules of the polynuclear cells were well stained, the granules of our marrow cells were pink; while in those where the granules of the polynuclear cells were very faintly stained, the granules of the marrow cells were blue. In some other preparations, again, the granules of the marrow cells seemed to have stained both with eosine and methylene blue, for they had a distinctly purple colour—a colour which may be produced by mixing red with blue. All this, I take it, points to the fact that these granules are amphophile, staining with eosine or methylene pretty much according to the respective strengths of these dyes. I cannot find in my preparations any confirmation of the view¹ that these marrow cells contain both basophile and oxyphile granules lying one alongside the other. And I wish to emphasise the fact that all the marrow cells from the blood of these two cases of leukæmia were amphophile, for after carefully examining numerous preparations, I could find no evidence of the presence of a marrow cell with purely basophile reaction. It is scarcely necessary to add that these amphophile corpuscles are not the large eosinophile corpuscles also, found in the blood in leukæmia—corpuscles, which in size, shape of nucleus, and general appearance, resemble these amphophile cells, but differ from them in containing large eosinophile

¹ Buchanan, *Journal of Pathology and Bacteriology*, vol. iv, 1896.

granules. The granules in these eosinophile cells are strongly eosinophilous, while those of the amphophile cells are but faintly so, even in the corpuscles whose granules are the coarsest. It may be that the amphophile corpuscles form a stage in the formation of this large eosinophile corpuscle, for Kanthack and Hardy¹ have shown that there is a stage in the elaboration of the eosinophile corpuscle of the frog where that corpuscle is likewise amphophile.

In regard to the minute *structure* of the various white blood corpuscles little remains to be said. Each corpuscle has a reticular nucleus, staining with varying degrees of intensity in the different kinds of leucocytes, the intensity of the stain probably depending on the closeness of the nuclear network and on the thickness of its individual strands. As to the rest of the cell, Gulland² has shown us that it also contains a meshwork (the mitoma) of fine filaments, forming an outer network continuous with that of the nucleus. The "granules" in the cell are the "knots" (the microsomes) of the network, the coarsely "granular" corpuscles having a coarse mitoma with large microsomes, while the finely granular cells have a fine mitoma with fine microsomes. The "granules" of the cells, then, though almost always staining somewhat differently from the nucleus, and looking like granules, are not granules, nor yet products secreted by the cell, and lying free in the cell plasma; but they belong to the stroma of the cell, and are as much a part of the cell as the nucleus itself. Gulland thinks that the cell mitoma has to do with amceboid movement—if not the source of movement, the means by which it is carried out—the mitoma and microsomes being coarsest in those cells most actively motile. In support of this view he reminds us that the very active eosinophile corpuscle has very large microsomes, while the microsomes of the sluggish hyaline cell are with difficulty made out.

Of what has just been said as to the structure of the leucocyte, any observations I have made are in agreement more or less with those of Gulland. In the finely granular oxyphile, and in the basophile cells, even with a one-eighteenth or one-twelfth oil immersion lens, the network of the stroma seemed undoubted; but in the eosinophile cells, on the other hand, I could never make out any filaments connecting the eosinophile granules. This last may be due to my methods of staining, or to the rupture of their connecting filaments, which, as a matter of fact, must often take place; for it

¹ Kanthack and Hardy, *Philosophical Transactions*, 1894.

² Gulland, *Journal of Physiology*, vol. xix.

is a common occurrence to find large eosinophile granules lying outside of, and quite free from, the plasma of their corpuscle.

The *origin* of the different kinds of leucocytes and their relationships one to another is a subject still in dispute, and one on which any observations I have made throw little light. I shall content myself, therefore, with a brief statement of two opposite points of view taken up by certain writers on the subject. The first is that of Gulland.¹ He says that, as a rule, all kinds of leucocytes are derived from the lymphocyte (which is the form of all young leucocytes), and that the special characters which these leucocytes subsequently develop are determined by the functions they assume and the environment in which they live. The shape of the nucleus depends on the size and activity of its owner, the nucleus becoming bent (horse-shoe shaped) when the cell is not large enough to let it lie straight, or becoming multipartite (polynuclear) in the more active cells so as to allow of their passing more readily through narrow apertures. The "granulation" of the cell, we have already seen, Gulland considers also to be determined by the cell's activity. When not too much specialised one kind of leucocyte may, through change of function, take the characters of another. For example, a small hyaline cell may become a polynuclear corpuscle, and a polynuclear corpuscle an eosinophile corpuscle; or, a finely granular basophile cell may become a large basophile cell; but the eosinophile cell cannot become a large basophile cell. These more highly specialised cells do not themselves readily divide and so multiply, but any lymphocyte may develop into either of them if circumstances determine it so.

The other point of view is that taken by Hardy and Kanthack, who maintain that the various kinds of leucocytes are generically quite distinct, and that the rounded nucleus of the hyaline cell, the polymorphous nucleus of the polynuclear cell, and the horse-shoe nucleus of the eosinophile cell are all true morphological features, and not due to environment. They recognise that the hyaline cell is the mature form of the lymphocyte, and must therefore have its origin in lymphoid tissue; but they seem to think that special regions exist for the proliferation of the other kinds of leucocytes—*e.g.*, the intestinal wall for the polynuclear cells, and the lining membranes of the body cavities for the eosinophile and large basophile cells.

As to the *functions* of the different kinds of white corpuscles

¹ Gulland, *Journal of Physiology*, vol. xix.

found in the blood, much in recent years has been written, but with this aspect of the subject I do not propose to deal otherwise than in the form of a most brief *résumé*. The lymphocyte, we have seen, is an immature cell, and as such its function is to grow and become mature. The same, I take it, applies to the finely granular basophile cell. The corpuscles classed under the title "coarsely granular basophile cells" are not found in the blood in health; and why they should be there in cases of spleno-medullary leukaemia has not been satisfactorily explained. They are probably derived from the bone-marrow, where similar cells are to be found; but more than that we do not know, and even of that we are by no means certain.

The remaining three kinds of corpuscles—the hyaline, polynuclear, and eosinophile—are concerned in the various inflammatory processes which take place in the tissues. These corpuscles probably all contain, and excrete under certain circumstances, certain substances which have been called antitoxins, and which are supposed to neutralise the poisonous action of the toxins produced by the different micro-organisms. But not only do the substances secreted by these corpuscles neutralise the toxins of the micro-organisms, they also seem to have a paralysing action on the micro-organisms themselves. This at least seems to be so in regard to the eosinophile cell, which is non-phagocytic, and which therefore can only produce its effect on the adjoining micro-organism by means of an excretion. The hyaline and polynuclear cells, on the other hand, are phagocytic—*i.e.*, they take up into themselves and digest the micro-organisms whose condition will permit it. Probably the eosinophile corpuscle, by its secretion, so paralyses the micro-organism as to render it possible for the phagocyte to swallow it up, and so remove from the tissues a source of irritation. This explanation is strengthened by the observation that the eosinophile corpuscle always arrives at the seat of irritation, and attaches itself to the irritating micro-organism some time before the appearance of either of the phagocytes.

From the above it will be understood how it is that in most chronic diseases an examination of the blood reveals an increase in the number of white blood corpuscles—a response, doubtless, to the presence in the circulation of the irritant which causes the disease. In many acute illnesses, on the other hand, the number of leucocytes in the blood is less than normal, due probably to destruction of phagocytes by a virulent micro-organism. Convalescence brings back again

the proper number of white corpuscles; and, indeed, the crisis of a fever may often be predicted by noting an increase, in place of the former deficiency, of these corpuscles. The increase means that the phagocytes no longer succumb to the virulence of the micro-organism, but that they will now succeed in eliminating the micro-organisms from the circulation.

SOME REMARKABLE CASES FROM THE MEDICAL LITERATURE OF THE PAST FIFTY YEARS.¹

By W. ERNEST THOMSON, M.A., M.D.,

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GENTLEMEN,—When our Secretary intimated to me at the beginning of the session that, in the first place, I had been elected President of this Society, and, in the second place, that a presidential address must be forthcoming, I had sufficient presence of mind to request a date for the address as late in the session as possible. I have often, during the winter, had occasion to congratulate myself on this foresight, at times when it seemed impossible for me to hit upon a suitable subject.

I felt that the members of a society of this kind do not assemble on a Saturday forenoon to listen to highly technical discourses on such subjects as physiology or ophthalmology, the two departments of medicine from which, perhaps, I could the most easily have prepared a paper, and I tried for many weeks to think of something which would be of general, rather than of special, interest.

Eventually an idea took definite shape. I thought of the cases which have been recorded in which an operation has not succeeded in its direct object, but in which the symptoms of which the patient complained disappeared, apparently as the result of the operation *per se*.

Starting on this line, I investigated the literature of such cases; but, as is apt to happen with promising subjects, the ore "panned out" badly. But while prospecting for ore of a

¹ Presidential address to the Medico-Chirurgical Society of Anderson's College, 26th February, 1898.

certain kind, I struck a lode of prodigious wealth of a different kind. In hunting for a special kind of case I came upon dozens of peculiar cases, a very small number of which I now propose to bring before you. I think that all these cases will prove interesting, and some amusing. I am only able to give you in this way a kind of literary hotch potch, not an elaborate meal of my own preparing: but, perhaps, you will not be the losers.

I shall not attempt to classify; indeed, classification is not really called for. First, then, here are some miscellaneous items.

William Cheselden, the famous surgeon, who died in 1752, is related to have always been sick from anxiety before operating, and as the moment approached was pale from fear. But the instant he commenced his work all fear vanished, the hand was electrified with skill, and the operation was perfect.—(*Asclepiad*, 1886, p. 58.)

No doubt, even in these days of anæsthetics, the surgeon is not always perfectly easy in his mind before operating, and although it seems odd that an experienced surgeon should have had such qualms, you must remember that these were pre-anæsthetic days.

But if it is odd that a surgeon should be so nervous, it is still more so that some patients should positively enjoy being operated upon.

Professor Leyden, of Berlin, once showed to his class a patient, a young lady belonging to that category of hysterical women who have a morbid desire to have painful operations performed without an anæsthetic. In this case the lady, during a paroxysm, actually fractured her jaw and injured the facial artery. The facial and carotid arteries had to be tied and part of the lower jaw removed. The patient insisted on the operation being done without an anæsthetic, and afterwards informed the operator that she had experienced great pleasure from the operation.—(*Recorder*, 1890, p. 95.)

Then, as regards the craze for operating, with which, no doubt, surgeons at the present time are occasionally affected, Monsieur Verneuil makes some very amusing and satirical remarks. He says, at the time when tenotomy was the rage, "Every tendon, every ligament, every muscle in the body is cut. Squinting, stammering, spinal curvature, bandy legs,

even deafness, are supposed to be thus cured." "Gynæcology and ophthalmology compete for first place in this new race." M. Verneuil predicts the triumph of the former.

"The ease with which certain methods become popular is truly surprising," he says, and as an instance cites the scraping of "cold" abscesses. "Therefore, we scrape and scrape, and those who do not scrape are said to be retrograde and behind the day; and so as we go on scraping we penetrate even into the spinal canal, and although the operation gives encouraging results (that is the regular formula) the scraped patient goes to join his ancestors in a better world."—(*Recorder*, 1886, p. 139.)

Now these remarks are very funny, and, no doubt, caused much chuckling among the "retrogrades," but I fear that M. Verneuil's satirical shafts are rather turned against these retrogrades at the present time, for many of the procedures of which he made such fun are standard operations to-day. It certainly is not safe in medicine or surgery to scoff prematurely.

I will next introduce you to some curious cases. First, as to that interesting class in which an operation has been performed unsuccessfully, *qua* the operation, but in which the patient has been relieved of symptoms.

In a girl, aged 19, Lawson Tait opened the abdomen to ascertain the nature of a tumour, and operate on it if possible. The tumour was found to be in the head of the pancreas, and could not be attacked. The girl recovered, and the tumour disappeared.—(*British Medical Journal*, 1883, vol. i, p. 301.)

Mr. Tait remarks about these cases of exploratory incision of the abdomen:—"In some of these cases results of the most marvellous kind have followed, the ascitic fluid has not appeared again, and tumours of spleen, liver, and of other kinds, the nature of which was not ascertained, have disappeared, and the patients have been permanently cured. I am as far off as ever from any explanation of this extraordinary fact, but as it has received abundant confirmation since I first announced it, it is beyond dispute."—(*British Medical Journal*, 1888, vol. ii, p. 1097.)

It is now eight years since that was written, and as far as I know we are still no nearer a solution. I might relate more of these cases, but will refrain, as I have a good deal to say about other things.

We are all interested in operations performed by skilled hands, but I think perhaps the interest is more intense when we hear of operations successfully performed under pressure of urgency by laymen. The following case of amputation of the arm by the carpenter and mate of a ship is so thrilling that I must read it to you from the original account:—

“A photographer, aged 35, carrying on business in Australia, resolved to take a long holiday. He and his wife determined to start for England in a sailing ship. He left Australia in May, 1886. On 11th June the ship was off Cape Horn, and was being driven before a furious gale. Before the storm subsided, one of the crew had been killed and the captain and first mate injured. One sea swept the decks while the photographer was standing amidships. He was thrown violently over the skylight and carried into the mizzen rigging. When the water left the ship, the man found himself suspended by the arm and evidently much injured. After he had been assisted to the deck it was found that there was a compound fracture of the left fore-arm. The limb had been terribly crushed, and a large part of the skin torn away so as to leave the tendons bare. The damage did not extend beyond the elbow. There was but slight bleeding. The ship carried no surgeon, and the treatment was undertaken by the second mate, who had no knowledge of surgery other than that dictated by commonsense. The fore-arm was lightly fixed to a board, and the wounds covered with wet rags. The medicine chest contained some laudanum, but the virtue appeared to have gone out of it, for it in no way relieved the acute pain. Four days after the accident the hand and fore-arm were gangrenous, and the gangrene was spreading. The patient had suffered intensely and had had no sleep. A consultation was held between the patient, the carpenter, and the second mate, and it was decided that an amputation should be performed. None of them had ever witnessed a surgical operation—a point that was probably in the patient's favour. It was resolved that the amputation should be performed through the arm at the junction of the middle and lower thirds. The reasons were these:—The gangrene had not reached the elbow, and it was considered wise to cut well above the mortified parts; in the second place, the brachial artery could be felt beating most easily at the place named, and it was deemed wise to keep a careful eye upon the vessel when the amputation was carried out. The patient came up on the deck, which at the time was covered with snow, and took his seat upon a pile of sails. The instruments were

provided by the carpenter, and consisted of a shoe knife, a saw, and a sail needle. The patient's wife furnished a sewing needle and some silk. A cord was bound tightly round the limb above the operation line. The operation was commenced by the carpenter, but his courage soon failed, and he handed the knife to the second mate, who performed the operation with considerable skill and nerve. A circular incision was made through the skin with the shoe knife. The site of the pulsating artery had been previously noted, and the cut was cautiously deepened until the vessel was exposed. It was isolated by the sail needle and secured in its continuity by a thread ligature. After it had been firmly tied, the vessel was cut. It is probable that the ligature included the veins and the nerve. The incision was then cautiously deepened around the other parts of the limb, and a careful search made for vessels of equal magnitude that could be secured in the same way. None were found, and it is to the credit of the operator that he did not mistake the ulnar nerve for a blood-vessel. The muscles were now divided down to the bone by the same circular cut. The biceps contracted more than the triceps, of course, and the mate removed an inch or so of the latter muscle to make the section even. The divided soft parts were protected and retracted by strips of linen, and the bone was then sawn through by the carpenter. After the ligature was removed from the limb there appears to have been but little bleeding. The mate rounded off the end of the bone with the shoe knife, so as to make it as smooth as possible. Finally, four vertical cuts were made in the stump, so that the edges of the divided skin should meet over the bone in a point. All parts of the wound were now brought together with sutures, a sewing needle and the silk provided by the patient's wife being used for the purpose. The stump was further supported by some plaster that was found in the medicine chest. The operation was completed in the somewhat unusual time of one hour and forty-five minutes. Amputations of the arm have been performed in less time than this, but the procedure can seldom have been carried out with greater ingenuity and courage. As for the patient, it is scarcely possible to speak in too high terms of admiration of his splendid pluck and marvellous power of endurance. The records of surgery can provide few more remarkable pictures than this:—A ship on the high seas, and on the snow-covered deck a photographer, seated on a pile of sails, critically supervising the amputation of his arm by a ship's mate and a carpenter." The patient had a tedious recovery, but eventually had a good serviceable

stump.—("A Sixteenth Century Amputation," by Frederick Treves, F.R.C.S., *Lancet*, 1887, vol. i, p. 63.)

From the class of amateur operations—not a large one—I now take you on to a very large class of cases, the curious accidents. Most of those I shall relate are accidents involving brain or heart, but I shall refer also to the case of Alexis St. Martin, who received a wound in the stomach, and has become famous in history.

One is in the habit of associating wounds of the brain and of the heart with a fatal result, but, especially in the case of the brain, death does not by any means always follow. Indeed, modern operative surgery emphatically contradicts this supposition. Still, even allowing that we know we can operate on the brain itself in many cases, exceedingly curious accidents (in which may be included suicidal injuries) have been recorded which one might have reasonably expected to be followed by death. Indeed, some of them were, as you shall hear, but a great many were not.

I find that the following report taxes my powers of belief to the utmost:—

A man developed an abscess in the groin. When the abscess was opened it was found to contain a small spelling book. It was ascertained that this patient, when a boy, was shot; and it is supposed that the spelling book was in his trousers' pocket, and was shot into the groin.—(*Medical Press and Circular*, 1884, vol. ii, p. 419.)

A man walked from Stafford to Newcastle, and from Newcastle to London, where he died. In his brain was found the breech of a gun.—(*Medical Press and Circular*, 1884, vol. ii, p. 419.)

A man died in one of the Vienna hospitals. In his brain was found a rusty iron nail, which, from its appearance, was supposed to have been there since early childhood.—(*Medical Press and Circular*, 1884, vol. ii, p. 505.)

Here is a curious case in which the patient recovered.

A carbine exploded accidentally, forcing the iron ramrod through the back of the patient, the point of entry being by the right side of the fourth dorsal vertebra. It passed upwards along the chest, through the deep parts of the neck,

through the skull and brain, and a length of 30 cm. of it appeared through the left side of the head. After cutting down upon it through the neck, it was forced back by blows of a hammer, and extracted through the neck opening. The patient recovered with the loss of the sight of the right eye.—(*Medical Press and Circular*, 10th October, 1883.)

The following case is not perhaps so extraordinary in the light of present day knowledge, but must have been considered very wonderful at the time (1860):—

A man of 30 to 40 years old had been attacked and wounded over two years previously. One wound was over the left parietal bone. He is said "to have suffered in his head, and to have become almost idiotic." Just above the left ear was found a resisting tumour, about the size of a bean, covered by healthy skin; pressing on it gave great pain and aggravated the central symptoms (presumably epileptic.)

On cutting into the tumour, the blade of a poniard, 10 cm. long, 12 mm. broad, and 3 mm. thick at the back, was found, and extracted. A probe passed into the track indicated that the blade had really been buried in the brain substance for two years and eight months. The patient was greatly relieved of his epileptiform attacks.—(*Medical Times and Gazette*, 1861, p. 278.)

As showing how little the upper portions of the brain are essential to an actual animal existence as compared with the lower portions, the pons and medulla, whose integrity is essential for the maintenance of vital functions, the following cases should interest you. The first case also illustrates the fact that intellectual functions are, in right-handed people, chiefly carried on by the left cerebral hemisphere:—

A man is reported by Porta to have lost the whole of his right cerebral hemisphere by an accident. He was unconscious for a few hours only, and when he recovered consciousness he proved that immediately after the accident he had *not* been unconscious, because he recollected being picked up and taken to hospital.

Eighteen months later the wound was closed. He had, of course, left-sided paralysis; but his left cerebral hemisphere being intact, his intellectual functions are said to have been unimpaired.

At the same time I think it is probable that this last statement may be taken *cum grano salis*. There may not have been much intellectual impairment, but as

Byrom Bramwell has pointed out in connection with the American crowbar case, there is often some degree of alteration in the intellectual functions in these cases, if small alterations be looked for.—(*Lancet*, 1873, vol. ii, p. 349.)

In the following case there had even been an accident at the base of the brain. The account does not state the exact position. Although eventually fatal, the patient lived many years:—

A commercial traveller, aged 32, was admitted to the London Hospital in January, 1888. Until two weeks before admission he was in good health, and kept a set of books most accurately. He came to hospital complaining of pain in the head and drowsiness. Soon afterwards he died with symptoms stated to be apoplectic.

Post-mortem an abscess was found at the base of the brain, the size of a turkey egg, and evidently not of recent formation. Inside the abscess was an ordinary school pen-holder and nib. It is stated to have been embedded in bone, and to have evidently been a long time in its position. No trace of injury to the corresponding eye or nostril could be found. The widow had never heard her husband allude to any injury of the kind, and it is quite unknown how or when it was inflicted.—(*Medical Press and Circular*, 1888, vol. i, p. 70.)

I will conclude my cases of accidental injury of the brain with the two following remarkable ones:—

“A South African native, aged 35, was struck with a pickaxe just above the frontal sinus in the middle of the forehead. The blow had fractured both tables of the skull, and had made a triangular opening in it.

“When first seen medically (which was, as far as can be gathered from the account, three weeks after the accident and shortly before death) it was found that the man had suffered a great deal during the first week. After that time the pain got less, the intellect became cloudy, he fell into a stupor, and died.

On inquiry it turned out that, in accordance with native views of the practice of surgery, the man's wife had been probing the wound very religiously and energetically with the wing feathers of a fowl. By stripping off the webs, excepting just at the point of the feather, she had made a most useful instrument for removing any pus from the interior of the wound. Using one of these feathers as a probe, she

would introduce it into the wound, and then by twirling it energetically between thumb and forefinger she collected and removed a large quantity of what she considered to be obnoxious pus.

"*Post-mortem* it was found that the poor woman, in her anxiety for her husband, had removed as pus a large portion of brain matter—in fact, had almost emptied her husband's cranium. From the external opening she had drilled a hole 4 inches deep and about 2 inches in diameter. She had, indeed, for three weeks made daily attacks upon her husband's brain, and had at each attack removed a portion of it; and yet the man survived, until at last even the vital powers of a South African negro were unable to hold out any longer, and the poor fellow succumbed to the painstaking surgical procedures of his wife."—(*Medical Press and Circular*, 1887, vol. i, p. 152.)

One might recount such cases of brain accident for hours and not exhaust the list. But there is one case, perhaps the most famous on record, which I shall relate. This is generally known as the American "crowbar case."

"Phineas Gage, æt. 25, a shrewd intelligent man, of middle stature and good health, was employed as a superior kind of workman in the construction of a line of railway. On the 13th September, 1848, he was engaged in charging a hole in a rock with powder, for the purpose of blasting it, and erroneously believing it to be covered with sand, he let the end of an iron bar fall upon the powder for the purpose of ramming it down, he being at the moment standing leaning over the hole, but with his face momentarily somewhat averted. An explosion followed, and the bar was forced directly upwards, passing *through* his head high into the air, and was found at some rods' distance smeared with blood and brains. It weighed 13½ lb., is 3 feet 7 inches in length, and 1½ inch diameter; the end by which it entered having a taper of 7 inches long, the diameter at the point being one-fourth of an inch. It entered the cranium opposite the left angle of the lower jaw (*sic*), behind the zygoma, and emerged on the left side of the centre of the frontal bone, near the sagittal suture."¹

"Thrown down at first, the man spoke after a few minutes,

¹ A more exact description of the course of the bar through the skull will be found in Dr. Byrom Bramwell's paper, "The Process of Compensation and some of its Bearings on Prognosis and Treatment," *British Medical Journal*, 21st April, 1888. The account here given is from the *British and Foreign Medico-Chirurgical Review*, 1850.

and was conveyed to a cart, from which, after sitting erect in it during the three-quarters of a mile ride, he descended of his own accord, and then, with but little help, mounted a long flight of stairs leading to a piazza, where he sat down, perfectly conscious, until aid could be procured. A surgeon arrived in about half an hour after the accident, and soon afterwards Dr. Harlow joined him." (The case was originally published by Dr. Harlow.)

"They found a large fracture at the top of the head, which, from the uplifted position of the broken bones, and the protrusion of portions of the brain, gave the idea of the operation of some force from below. A slit-like wound was also observed at the angle of the jaw, and into both wounds the finger could be deeply inserted. The small fragments of the cranium were removed, the larger ones adjusted, and the entire wound simply dressed with adhesive plaster, portions of brain having first come away. . . . We need not pursue the details of the treatment of the case. It suffices to say, that although during its progress temporary and occasional delirium did occur, the patient eventually was completely restored to health both of mind and body, with the exception of the loss of sight of the left eye."

I have quoted the details of this most remarkable case from an account published not long after it occurred. You will notice that it is stated that the patient was eventually completely restored to health both of body and mind. Ferrier, however, quoted by Byrom Bramwell in 1888, points out that this was not quite accurate. Dr. Harlow is quoted in these terms:—"His contractors, who regarded him as the most efficient and capable foreman in their employ previous to his injury, considered the change in his mind so marked that they could not give him his place again. . . . Previous to his injury, though untrained in the schools, he possessed a well-balanced mind, and was looked upon by those who knew him as a shrewd, smart, business man, very energetic and persistent in executing all his plans of operation. In this regard his mind was radically changed, so decidedly that his friends and acquaintances said he was no longer Gage" (Byrom Bramwell, *loc. cit.*)

He died of epileptic convulsions at a distance from medical assistance, and no *post-mortem* was made. The skull, however, was exhumed, and the seat of lesion exactly determined.

This case is an extremely instructive one, but time does not permit me to consider it further.

I propose now to relate some cases of injury to the heart in which the patients lived for some time.

A man, aged 44 at his death, received a bullet wound when 14 years old, and returned to work six weeks later. His last illness was ascribed to cold. *Post-mortem* there was found embedded in the heart apex a bullet surrounded by atheromatous deposit.—(*Medical Times and Gazette*, 1867, vol. i, p. 97.)

A French surgeon, in 1875, presented to the Paris Surgical Faculty the heart of a woman who had been shot with a revolver. The bullets measured three lines (one-fourth of an inch) in diameter. One of them had passed through the right lung, had penetrated the heart by the posterior wall of the left ventricle, and was found lodged in the latter (? in the wall or in the cavity.—W. E. T.) She lived eighteen days, and nothing during life led to the suspicion that such a lesion had taken place. Auscultation revealed nothing, and the pulse was regular. The hole made by the ball could hardly be made out.—(*Lancet*, 1876, vol. i, p. 117.)

Another curious case is that of a farm labourer who lived fifty-four days after being shot with a revolver. On examining the heart a small bullet was found in the left ventricle, which had passed through the aorta and semilunar valve to get there.—(*Lancet*, 1879, vol. i, p. 33.)

A woman died in the New York Hospital from heart and kidney disease. *Post-mortem* a black pin was found in the heart with its head free in the left ventricle. No lesions were found in the oesophagus, stomach, or pericardium, but the presumption is that it entered the body by the mouth. That is, at least, the most likely way, especially since the patient belonged to the sex which is most given to making the mouth a receptacle for pins.—(*British Medical Journal*, 1889, vol. i, p. 92, quoted from *New York Medical Journal*.)

These cases of injury to the heart in which death was not by any means instantaneous are not very numerous.

No historian of remarkable cases can omit the famous one of Alexis St. Martin and his gastric fistula. It is not possible here, however, to go into the details of the case. The main facts are as follow :—

Dr. Beaumont, while stationed in 1822 at a place called Michilli-Mackinac, in the Michigan territory, was called upon to take charge of Alexis St. Martin, a young Canadian, who had been accidentally wounded by the discharge of a musket. "The charge, consisting of powder and duck shot, was received in the left side, at a distance of one yard from the muzzle of the gun. The contents entered posteriorly, and in an oblique direction forward and inward; literally blowing off integuments and muscles to the size of a man's hand, fracturing and carrying away the anterior half of the sixth rib, fracturing the fifth, lacerating the lower portion of the left lobe of the lungs (*sic*), the diaphragm, and perforating the stomach."

On the fifth day sloughing took place; lacerated portions of the lung and stomach separated, and left a perforation into the latter "large enough to admit the whole length of the middle finger into its cavity; and also a passage into the chest half as large as his fist."

Violent fever and further sloughing took place; and for seventeen days everything swallowed passed out through the wound, and the patient was kept alive chiefly by nourishing injections. By and bye the fever subsided, and after the fourth week the appetite became good, digestion regular, the evacuations natural, and the health of the system complete.—(*The Physiology of Digestion*, by Andrew Coombe, M.D., 1842.)

Recovery was eventually complete except for the fistula. Less than a year afterwards he was going about doing light work. He submitted to have experiments on his gastric secretion and movements by Dr. Beaumont, which experiments form the basis of our present accurate knowledge of the digestive function of the stomach.

Next I am going to tell you about some astonishing cases of suicide and attempted suicide.

A woman forced the handle of a handmirror down her throat, causing suffocation by pressure on the larynx.—(*Lancet*, 1889, vol. ii, p. 608.)

A patient in one of the asylums suddenly plunged his head into a tureen of soup which had just been placed on the table.—(*Lancet*, 1877, vol. ii, p. 326.)

Now, just listen to this:—

A man, aged 44, drove a dagger through his skull into the

brain. The weapon was 10 cm. long and 1 cm. wide. He had held the dagger in his left hand, and given it with the right several blows with a mallet, believing he would fall dead at the first blow. To his profound surprise he felt no pain and observed no particular phenomena. He struck the dagger in all about twelve times. When seen about two hours later, the handle of the dagger was projecting from the skull at the junction of the posterior and middle third, and in a transverse position. (This presumably means that the plane of the handle and blade was at right angles to the antero-posterior plane of the head.—W. E. T.) The whole blade was embedded except 1 cm.

For half an hour unsuccessful attempts were made to get the dagger out. The patient was placed upon the ground, two vigorous persons fixed his shoulders, and, aided by a strong pair of carpenter's pincers repeated attempts were made. Patient and assistants were raised off the ground, but the dagger was immovable. The patient felt no pain. He was then *walked* to a coppersmith's, and by strong pincers the handle of the dagger was fastened to a chain which was passed over a cylinder turned by steam power. The pincers, used for drawing out tubes of copper, were so made that the more they were pulled the tighter they grasped. The man was fastened to rings in the ground and the cylinder was gently set in motion. At the second turn the dagger came out.

I confess I do not understand how the cylinder could take *two* turns before moving the dagger, unless the patient "dragged his anchors," so to speak. The patient, who had submitted with the greatest coolness to these manœuvres, suffered no pain or inconvenience. Some drops of blood escaped, and a few minutes afterwards the man was able to walk away to a hospital, where he remained in bed for ten days, but without fever or pain. He returned to work, and the wound healed.

Experiments were made with the dagger on the head of a cadaver, and it was found that, without injuring the longitudinal sinus, it passed into the cerebral substance just behind the ascending parietal convolution; but the point had not reached the base.—(*Lancet*, 1881, vol. ii, p. 845.)

This is a most extraordinary case. It is unfortunate that I cannot tell you the further history of this man.

Another curious method of committing suicide is to blow one's self up with dynamite.

One poor wretch, because he was cited as a witness in a case in which his testimony would be prejudicial to himself, put a

dynamite cartridge in his mouth and ignited the fuse. I leave you to imagine the nature of the injuries.—(*British Medical Journal*, 1881, vol. ii, p. 159.)

The following case shows the most extraordinary determination to end life for an apparently inadequate reason:—

A man was arrested for poaching on fish preserves by means of dynamite cartridges. He decided to take his own life by the same means. He placed the cartridge under his chin, but the effect of dynamite explosions being most marked downwards, the chief effect was to damage the hand which held the cartridge, and the other hand to a less extent. He then lay down on the ground, placed a cartridge on his chest, and with great difficulty, owing to the injury to his hands, struck a match after many attempts, and applied it to the fuse.

The thorax and abdomen were completely emptied of their contents, and the corresponding parts of the vertebral column and ribs were also missing. The other parts of the body were not injured.—(*Medical Press and Circular*, 1887, vol. i, p. 80.)

A curious mode of suicide was to place a round pebble in each nostril, and then stuff a roll of flannel into the pharynx.—(*British Medical Journal*, 1883, vol. i, p. 88.)

Indeed, there are a number of cases recorded in which people have attempted suicide by blocking the upper air passages.

Gentlemen, I have nearly come to the end of my present budget of cases. I will relate, however, one or two of those peculiar cases in which a person, under some uncontrollable impulse, sometimes the result of alcoholism, at other times of religious fervour, purposely mutilates himself.

A man was admitted into the Birmingham General Hospital suffering from the loss of blood. It turned out on inquiry that he had been drinking heavily for some time and was attacked by delirium tremens. Being left alone in a second floor room, he deliberately cut off his foot with a carving knife. The foot was found in the room with the boot still on. After this he jumped from the window into the street, and was found walking about on the bleeding stump, and was conveyed to hospital.

The account does not relate whether he recovered or not, but I think after having gone through so much he deserved a chance to begin life afresh.—(*Medical Press and Circular*, 1885, vol. ii, p. 382.)

A woman, aged 39, who had borne many children rapidly, and nursed them freely, became strange in her manner, and read her Bible very much. One day her husband, on his return home, noticed she had one eye tied up, and elicited the fact that she had removed her eye as the Bible directed; and stated that she had done it with a meat hook. The optic nerve was severed so far back that it could not be felt at the foramen. And yet, gentlemen, in enucleating an eye with all the advantages of chloroform and proper instruments, the optic nerve is sometimes severed too near the globe.—(*Medical Press and Circular*, 1888, vol. ii, p. 260, quoting from *Proc. Ophth. Soc.*, vol. vii, p. 298.)

Dr. Thiersch, of Leipsic, related the case of a man who had circumcised himself at the age of 18. Later on, in 1870, being then married and a father, he slit up the hypogastrium from the symphysis pubis to the umbilicus, so that the omentum protruded, his object being, he said, to obtain a view of his interior. Although the knife used was dirty and blunt, the wound healed after the removal of the omentum.

A year later he laid open one side of the scrotum. The prolapsed testicle was replaced, and the wound healed.

In 1880 he again laid open his abdomen; the wound healed in fourteen days, notwithstanding prolapse of the omentum.

In May of the same year he removed his right testicle, and himself sewed up the wound. Four weeks later he removed the left one, but the spermatic cord escaped, and a hæmatoma as large as a child's head was formed.

This man acted under the influence of an uncontrollable impulse, and only had peace when he was completely castrated.—(*Medical Record*, 1881, p. 253.)

One word more and I am done. Patients sometimes introduce strange foreign bodies into the stomach, nose, ear, bladder, vagina, urethra, and so on.

In connection with the vagina a remarkable series has been chronicled. Schroeder concludes an enumeration of such foreign substances with this remark—"Probably the strangest foreign body ever discovered in the vagina was one found by me: a cockchafer lying beside a pomade pot."—(*Treves' Surgery*, vol. iii, p. 387.)

CASE OF CHLOROFORM POISONING, IN WHICH FIVE
OUNCES OF CHLOROFORM WERE SWALLOWED
—RECOVERY.

By WILLIAM GIBB DUN, M.D.,
Assistant Physician, Western Infirmary, Glasgow.

CASES of chloroform poisoning, in which large quantities of chloroform have been taken, are of such comparatively rare occurrence that I am induced to report the following case, which came under my care while in charge of Professor McCall Anderson's wards. The case was so urgent that treatment was at once undertaken by Dr. T. J. L. Forbes, resident assistant, and by the time I saw the patient all danger was past.

W. D., æt. 46, French cleaner, was admitted to Ward II of the Western Infirmary on 22nd September, 1895, at 1.10 P.M. On being brought from the ambulance waggon he appeared almost dead. No respiratory effort was visible, and the pulse could only be felt with difficulty. His face was very pale, and the lips cyanosed. The pupils were widely dilated, and there was almost no ocular tension, the eyes being as in the dead subject. No reflex was obtained in the eyes, and the voluntary muscles were all flaccid. The extremities were very cold.

Artificial respiration was commenced at once, and after a few minutes he began to breath. The stomach tube was then passed, and the contents of the stomach thoroughly evacuated. The food particles had no special odour, but the expired air had a distinct chloroform odour, resembling the breath of a patient on the operating table. Synchronously with the onset of good respiratory movements the pulse rallied, and numbered about 120 per minute, though very feeble.

2.15 P.M.—One-fiftieth grain of strychnine given hypodermically, mouth moistened with brandy, and hot applications over heart.

3.30 P.M.—Strychnine repeated. Pupils now a little more contracted, but still inactive. Bladder emptied by catheter; urine slightly albuminous; specific gravity, 1021; no sugar.

4.45 P.M.—For the first time there is now slight conjunctival reflex, and patient is moaning a little. On pinching the face the pupils dilate, and there is now more ocular tension. The bowels have moved in bed.

5.30 P.M.—The patient is now conscious, although very

dazed. He acknowledges having swallowed about 5 oz. of pure chloroform with suicidal intent. He complains of a sore mouth, and a feeling of soreness in the stomach. He has only vomited once, and does not complain of sickness.

24th September.—Patient is still progressing favourably. There is to-day a scarlatiniform eruption of his arms and legs, resembling that seen sometimes after the use of belladonna.

25th September.—As patient was feeling very well he left to-night.

The quantity of chloroform swallowed in this case was unusually large, and, but that the patient, as we learned later, vomited soon after taking it, would probably have proved fatal. Two cases have been recently reported.¹ In one, over 2 oz. had been taken; in the other, 3 oz. Both recovered under very similar treatment to that adopted in the present instance.

CASE OF GALL-STONES—CHOLECYSTOTOMY—HOURLASS CONTRACTION OF THE GALL-BLADDER.

By HUGH COLLIGAN DONALD, M.B., C.M., F.R.C.S. EDIN.,
Surgeon to the Paisley General Infirmary.

MY reason for reporting the following case is that I believe many cases of hour-glass contraction of the gall-bladder have not been recorded, although on reading Mr. Mayo Robson's recent and most instructive work on *Diseases of the Gall-bladder and Bile-ducts*, I find that under the heading of "Hour-glass Contraction of the Gall-bladder" he remarks:—"Hour-glass-shaped gall-bladder is probably not uncommon, for though I have found only one specimen in the museums, and that at Middlesex, I have myself operated on two cases in which the distal part of the gall-bladder contained calculi, and was connected with the gall-bladder proper by a narrow neck. While in one case I thought this deformity might be due to the contraction of an ulcer, in the other, the mucous membrane being smooth, the deformity was apparently congenital."

¹ *British Medical Journal*, 20th November, 1897, and 15th January, 1898.

Mrs. H., æt. 40, housewife, was admitted to hospital under my care on the 8th November, 1897, with the following history:—Two nights previously she was seized with a sharp spasm of pain in the right hypochondrium, radiating towards the umbilicus, and passing round to the right shoulder. It lasted two hours, increased in severity, and ultimately subsided with an attack of vomiting. She stated that nine years ago she had a similar attack to that described, which was followed by a second three weeks or a month later; but for the following five years she was free from pain or sickness of any kind, and up to onset of present illness only remembered having had one similar attack of spasm.

On admission patient was slightly jaundiced, emaciated, and weak; urine contained bile, and motions pale in character. Beyond tenderness on palpation over the region of the gall-bladder, no other physical sign was elicited. Patient was under observation in the ward for ten days before operation, and during that time she had from two to three spasms of pain per day, followed by vomiting, some of these slight, others very severe, but with each successive attack the symptoms tending to become worse than its predecessor. I should have preferred to have delayed operation till these attacks of pain had subsided for a few days: but as there was no evidence of this occurring, and the patient rapidly losing ground, I operated on 12th November, assisted by my colleague, Dr. Gibb.

The details of the operation were carried out on the lines described by Mr. Mayo Robson in his book already mentioned, and whom I had the great privilege of assisting in many of his gall-bladder operations during the period I acted as his private assistant. The gall-bladder was found to be thickened and contracted, being firmly adherent to, and tucked up to the under surface of the liver. It was distinctly hour-glass in character, and contained a thick, clear, and glairy mucus. Two calculi were removed from the proximal part of the gall-bladder, which was separated from the distal by a narrow neck, the calibre of which would admit a long probe, such as used in exploring the ducts. The distal portion and neck were excised, and the proximal part brought and anchored to the aponeurosis. The wound healed by first intention, and the gall-bladder was drained by means of a rubber tube, which was removed three weeks after operation. During the first three or four days after operation mucus was freely discharged, followed for two days by an admixture of mucus and pus, and latterly by pure bile. The opening into the

gall-bladder was completely healed six weeks after operation, and the patient was dismissed on the 8th December free from pain, improved in colour, and gaining weight and strength.

I cannot advance an opinion as to whether this condition of gall-bladder was congenital or due to ulceration.

For notes on the history of this case I am indebted to Dr. Mackay, house surgeon.

ON A CASE OF INTRACRANIAL DISEASE TREATED BY TREPHINING—DEATH—*POST-MORTEM* EXAMINATION.

By R. BROOM, M.D., B.Sc., Garies, South Africa.

OWING to the comparative newness of brain surgery and the much that has still to be learned on the subject, it is probably well that most cases should be put on record whether successfully or unsuccessfully treated—the successful as indicating the correctness of the treatment, and the unsuccessful as showing from *post-mortem* examination what additional measures might have been taken, or what had been done amiss.

R. T., aged 35, ship's carpenter, was first seen by me at Port Nolloth on 24th July, complaining of having had a "fit" on the 19th. So far as he was aware he was in good health at the time. He felt the attack coming on, and went to his cabin where he became unconscious.

On the 24th, after having been ashore, and as he was returning to the ship, he experienced a numb feeling in his left hand which lasted for about half an hour. He remained well till the 30th, when during the whole day he experienced a sore feeling all over his left side, but worst in the hip. About 5 o'clock in the evening, when washing himself, he found his left hand numb. He then experienced a "cramp" all over his left side; he fell down, and his left arm kept on twitching for about twenty minutes. On the following day he was taken to hospital and examined by me. There was slight paralysis of the left leg, but the patient could walk with a little difficulty. The left arm was moderately paralysed, but not completely. The paralysis was less marked in the muscles of forearm and hand than in those of the upper arm. The biceps was considerably contracted, painful, and excitable. If the elbow were moved quickly it caused extreme pain, but

if gently moved there was little resistance and little or no pain. There seemed to be no defect in sensation.

No history of syphilis could be made out, and no clue could be found from the family history. Patient denied having had any injury to his head.

As the patient was manifestly suffering from some intracranial mischief, I was anxious to have him under careful observation. After remaining in hospital for two days, during which nothing further was made out, he insisted on going back to the ship.

Till about 19th August he appears to have remained in much the same condition, getting, if anything, a little worse; but on this date his condition became manifestly more serious. On the 21st, as he was manifestly dying, he was brought ashore at my request to see if anything could be done, and was readmitted to hospital. There had been no further "fits."

On admission the paralysis was similar to that when last seen. Patient drowsy, but conscious, temperature subnormal, and pulse very slow.

On 22nd August during the day the pulse kept between 50 and 60, and the temperature between 95° and 96°, and the patient was very drowsy, but conscious when roused. About 5 P.M. he became quite unconscious, temperature 95°, pulse 48. As the patient was sinking rapidly, and the symptoms clearly pointed to brain pressure in the region of the right parietal tuberosity, I thought it right to make an exploratory opening into the brain to see if anything could be done to give relief. At 6 P.M. a half-inch trephine opening was made about half an inch in front of the centre of the tuberosity. The bone was found to be very dense and thick, and on removal of the button it was found to be eroded with caries on the inner surface. The greatly thickened dura mater pressed into the opening as a dense firm tumour. With a large sized trephine the opening was enlarged to about a square inch. By this opening as much as could be reached of the diseased tissue was removed, and the cavity washed out; and it was hoped that with the free opening thus made the disease might become arrested. The patient stood the operation well, and at the conclusion his pulse was 72 and the temperature 97°.

23rd August.—Patient slept well. This morning looks considerably brighter, and is just conscious. Pulse, 78; temperature, 96°; noon—pulse, 90; temperature, 97°; 6 P.M., pulse, 96; temperature, 98·8°.

24th August.—Patient looks better, and is quite conscious. Pulse during day has varied between 90 and 104; temperature, 96° to 98°.

25th August.—Patient says he feels all right, and wants up to have a smoke. Pulse, 80 to 100; temperature, 96·8° to 99°.

26th August.—Did not sleep well, and during the day restless.

27th August.—During the day patient was distinctly worse, and as there was evidence of further brain pressure in the evening the wound was opened, but as everything was found in a satisfactory condition it was again closed.

The patient became steadily worse, and died on the morning of 29th August.

On *post-mortem* examination it was found that there was extensive caries of the inner table of the right parietal bone, with great inflammatory thickening of the dura mater. The diseased patch, which was of an oval shape, measured 3 inches by 2 inches. Its centre was about half an inch behind the parietal tuberosity, and its long axis extended upwards and slightly forwards, and downwards and slightly backwards. The upper edge came within 1½ inch of the sagittal suture, the lower to within three-quarters of an inch of the level of the edge of the temporal bone. Besides the patch of caries there were a number of small patches where the bone presented an unhealthy appearance as if caries were about to commence. The whole bone was much thickened and very dense. The wound was perfectly healthy, and, with the exception of the inflammatory thickening of the dura mater in the neighbourhood of the caries, there was no evidence of inflammation anywhere on the surface of the brain.

In considering the case in the light of the *post-mortem* examination it remains very doubtful whether any further operative interference would have led to a happier result. In the patient's state at the time of operation it is very doubtful if he would have stood the removal of the whole of diseased patch even if the exact extent had been known, and in finding out its extent it would have been necessary to remove a considerable amount of healthy bone, while even if the whole had been successfully removed, the condition of the bone makes it quite likely that the disease would have recurred at another spot. As it was, the operation prolonged life for a week and restored consciousness for three or four days, and had the disease been less extensive it seems likely that complete recovery would have resulted. An earlier operation might have been successful, though it is very doubtful, and unless the diagnosis had been made completely at an early stage it would hardly have been justifiable.

In the operation I was assisted by my hospital attendant, Mr. H. Christensen, and by my wife.

TWENTY-TWO CONSECUTIVE ARTHROTOMIES
OF THE KNEE.

By JOHN O'CONOR, M.A., M.D., T.C.D.,
Senior Medical Officer, British Hospital, Buenos Ayres.

ALL these cases have been treated during the past two years, and no selective process was adopted. The rheumatic patients were operated on because the function of their joints seemed doomed, and in one case this treatment was undertaken as a forlorn hope to save a patient's life.

No apology is necessary for the drainage of gonorrhoeal knee-joints, as all expectant plans have proved utterly futile; neither does the removal of blood and clots need any qualifying remark, further than that it is a surgical obligation.

As to traumatic "water on the knee," in my opinion, no method of treatment has a brighter future before it than arthrotomy and drainage. All the joints were irrigated during operation with mercuric lotion, and in five cases it was daily repeated. Drainage was continued in each instance until the serous discharge had ceased, and nothing but normal synovial fluid seen trickling from wound.

Splints were only used in six cases, and were early discarded. Active motion was enforced as soon as the gauze drain was dispensed with, and in not a single case was there any cause for post-operative anxiety.

In this paper the termed "discharged cured" signifies that the joint was restored to its normal function and contour.

1. *Traumatic Hæmarthrosis*.—F. M., aged 16, admitted on 27th February, 1896, suffering from a large swelling of left knee-joint. Three days previously, while exercising a polo pony, he was thrown off, and falling on to some stones received a severe injury to left knee. On day of admission, as the joint was considerably distended, my assistant, Dr. Lind Cruickshank, very properly aspirated, and 2 oz. of blood were withdrawn, but as the cannula became plugged with clots the joint could not be properly emptied. On 28th February arthrotomy was performed, 5 oz. of blood and many adhering clots being removed. Drain removed four days later. Discharged cured on 1st April. During past eighteen months he has frequently reported that left knee is as strong as right one.

2. *Traumatic Serous Effusion*.—T. S., aged 38, admitted
No. 5. Z

on 29th January, 1896. While working in a ship's hold on 14th January a bag of maize fell on his right knee. On admission there was well-marked redness and swelling, joint very much distended, heat well marked, and pain on the slightest movement. On 9th March arthrotomy was performed, and 3 oz. of serum evacuated. Drain left out on eighth day. On thirty-sixth day he was discharged cured. Two weeks later he resumed his work as stevedore, and has since remained perfectly well.

3. *Traumatic Hæmarthrosis.*—R. P., aged 31, admitted on 19th May, 1896. Five days previously he was thrown out of a dog-cart, and received a severe injury to left knee. On admission the knee was greatly distended, very painful to touch, heat well marked, and a large extravasation of blood had taken place in popliteal and calf regions. On 20th May arthrotomy was performed, 5 oz. of blood and a great quantity of clots being removed. Drain left out on fourth day. He was discharged on the fiftieth day. He could now bear his weight on limb, and move joint through a right angle. A month later he was able to ride about the camp without any inconvenience. I saw him on 4th December, 1897, found knee normal in appearance, and movement quite restored.

4. *Old Traumatic Hæmarthrosis with United Fracture.*—P. S., aged 30, sailor, admitted on 2nd June, 1896. While working on deck on 3rd February, 1895, he was knocked down by a sea, and immediately afterwards felt knee very much swollen and painful. A month later he was taken to an hospital, where, he said, "they treated me for congealed blood in the joint," and "with a hot probe they made an opening and squeezed the blood out." The knee remained stiff and swollen until 5th March, when, crossing a plank from wharf to ship, he fell into the water, his left knee striking the kerb-stone as he fell. His "mates at once recognised that knee-cap was split in two." On admission the left knee was considerably thickened, apparently distended, active movement absent, patellar bursa considerably enlarged, and any attempt at passive movement caused intense pain. On palpation a united vertical fracture of the patella was readily felt. On 4th June arthrotomy was performed. No serum or blood was found, but on introducing finger behind patella six strong bands were encountered, firmly connecting the posterior surface of patella to femur. As a futile attempt was made to rupture these with the finger, a strong curved

scissors was introduced and the adhesions divided. Considerable hæmorrhage followed, so much so that it was thought advisable to irrigate with turpentine lotion, and pack joint with iodoform gauze. The patellar bursa was then opened, and 2 oz. of dark blood were removed. Drain removed from joint on the sixth day. He was discharged on the fortieth day, and walked out of hospital without the trace of a limp; function completely restored. A month later he undertook stevedore's work.

5. *Traumatic Hæmorrhosis*.—P. W. W., aged 29, admitted on 8th July, 1896. While playing polo three days before, he received a severe blow on right knee. On 9th July arthrotomy was performed, and 3 oz. of blood removed. Drained until seventh day. Discharged cured on twenty-fourth day. Constantly reports that his "knee is as strong as ever."

6. *Chronic Rheumatic Arthritis with Effusion*.—G. P., aged 36, admitted 14th August, 1896, suffering from swelling, with slight pain and stiffness of right knee. This, he said, "was an old complaint, has been treated by many doctors, and as it is interfering with my work I want to have done with it." By a process of exclusion rheumatism was diagnosed, and potass. iodide, blisters, Scott's dressing, and a splint were used for one month. Massage was then used for fourteen days, but as the effusion did not show the slightest tendency to abate, arthrotomy was performed on 1st October—6 oz. of turbid serum and many old lymph masses detached by finger from recesses of joint were evacuated. Drain dispensed with on fifth day. Discharged cured on 28th October. When he came for inspection two months later, the joint was found normal.

7. *Chronic Synovitis*.—A. C., aged 28, admitted on 10th November, 1896. Six months previously he had an injury to knee, which caused swelling, pain, and stiffness, and in spite of rest and bandaging some thickening remained. As he found that he could not carry on his occupation as circus rider owing to pain when he attempted acrobatic performances, he entered hospital on above date. On 12th November arthrotomy was performed. A piece of thickened synovial membrane was excised, and about 1 oz. of sero-synovial fluid removed. Discharged cured on 30th November. Some months later Mr. Treves kindly wrote to me that he had seen patient, and thought that he was fit to resume his work.

8. *Acute Serous Effusion*.—M. H. B., aged 22, admitted on 25th August with pain, swelling, heat, and stiffness of right knee, due to an injury received by falling from a horse. Scott's dressing and splint were applied until 7th October. As no improvement took place, arthrotomy was performed, and 3 oz. of flakey serum removed. Discharged cured on 23rd November. Seen frequently since operation, and remains quite well.

9. *Gonorrhæal Arthritis*.—S. A., aged 34, admitted on 20th March suffering from gonorrhœa, and pain, stiffness, and effusion in left knee. On 24th March arthrotomy was performed, and 4 oz. of green, turbid serum, with numerous large lymph flakes removed. Gauze drainage continued for three days. On 10th April wound had healed. Joint normal in contour and function. Frequently seen during past six months; no relapse took place.

10. *Chronic Rheumatic Arthritis with Effusion*.—A. L., aged 48, drunkard, admitted on 27th May, complaining of pain, swelling, and stiffness of right knee, with transitory pains in other joints. Arthrotomy was performed on 31st May, and 2 oz. of flakey serum removed. Drained for two days. Discharged cured on 7th June, with good movement and no trace of swelling. Two months afterwards he reported that he had normal movement in the joint.

11. *Gonorrhæal Arthritis*.—C. N., aged 30, admitted on 19th March suffering from "an old clap," and a recent swollen and stiff right knee-joint. Arthrotomy was performed on 13th June, and he was discharged cured on 12th July. In this case the *Pharmacopœia* blisters, aspirations, Scott's dressing, splints, and massage had each a trial, but after eighty-four days the expectant plan was dropped, and 1 oz. of flakey serum with a piece of thickened synovial membrane were removed by incision. No relapse within five months.

12, 13. *Acute Rheumatic Arthritis*.—C. H. B., aged 41, admitted on 21st June suffering from acute rheumatism. Symptoms on admission were—Temperature, 102°; tongue thickly coated; pulse, 80; continuous sweating; anorexia: urine scanty, high coloured, with a trace of albumen; slight pain in left elbow without swelling; both knee-joints were swollen and painful; patella floating with some periarticular inflammation; and slight œdema. Notwithstanding a liberal

and prolonged use of the salicylates, alkalies, turpentine, quinal, flannel blankets, and fluid diet, the case gradually assumed a fatal type. On 17th July arthrotomy of right knee was performed, and 4 oz. of turbid serum, with many large masses of lymph, removed. On 24th July arthrotomy of left knee was performed, and 6 oz. of similar stuff evacuated. All constitutional symptoms disappeared after the second operation. Stiffness gradually became less, and he was discharged, with fair movement, on 17th September. Two months later, when he presented himself for inspection, he could walk without a limp. Joints found normal in appearance, and general health excellent.

14. *Traumatic Hæmarthrosis*.—J. W., aged 35, admitted on 1st June suffering from pain and swelling of left knee-joint, caused by his having fallen down the ship's hold on previous day. On 2nd June arthrotomy was performed, and 5 oz. of blood and clots evacuated. Drained for four days. Discharged cured on 7th July.

15. *Traumatic Hæmarthrosis*.—R. K., aged 20, admitted on 10th June. On the previous night he fell from his bicycle, and sustained an injury to right knee. On admission joint was considerably distended and painful. On 11th June arthrotomy was performed, and 12 oz. of blood and clots removed. Drained for three days. Discharged cured on 29th June.

16. *Acute Serous Effusion*.—J. B., aged 30, admitted on 24th July with tumour, dolor, calor, and rubor of right knee, caused by his having "twisted his leg" two days before in a ship's hawser. On 26th July arthrotomy was performed, and 3½ oz. of serum removed. Drained for two days. Discharged cured on 6th August. Resumed his work (sailor) two days later.

17. *Gonorrhœal Arthritis*.—A. R., aged 27, entered hospital on 21st July suffering from gonorrhœa, and swelling, pain, and stiffness of right knee. On 26th July arthrotomy was performed, and 5 oz. of turbid, flakey serum removed. Discharged cured on 14th August. No relapse within five months.

18. *Gonorrhœal Arthritis*.—W. W., aged 28, admitted on 13th September with gonorrhœa, and effusion, pain, and stiffness in right knee. On 25th September arthrotomy was performed, and 4 oz. of turbid, flakey serum evacuated.

Drain removed three days later. Discharged, with movement through a right angle, on 4th October. A month afterwards function was completely restored.

19, 20. *Double Gonorrhœal Arthritis*.—S. C., aged 46, admitted on 4th November with gonorrhœa, and pain, effusion, and stiffness in both knee-joints. On 6th November double arthrotomy was performed, and turbid serum and lymph mass removed from both joints. Drains left out on 8th November. Discharged cured on 3rd December.

21, 22. *Double Rheumatic Arthritis*.—P. G., aged 59, admitted on 12th November with acute rheumatism. As medicinal treatment showed no tendency to reduce the swelling of knee-joints, double arthrotomy was performed on 18th November, and 3½ oz. of flocculent serum removed from right knee and 4 oz. from left. Irrigation, with drainage, for four days. Constitutional symptoms promptly disappeared. Patient was allowed out of bed on 28th November, and discharged cured on 6th December.

I think these cases tend to prove that surgery deserves a trial in some common affections of the knee-joints.

MEETINGS OF SOCIETIES.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.

SESSION 1897-98.

MEETING V.—14TH JANUARY, 1898.

The President, DR. G. S. MIDDLETON, in the Chair.

- I.—CASE OF PERMANENT DEFECT OF THE CONJUGATE MOVEMENT OF THE EYES TO THE LEFT SIDE, WITH PARESIS OF THE LEFT MIDFACIAL MUSCLES, APPARENTLY FROM A LESION INVOLVING THE NUCLEUS OF THE SIXTH NERVE.

By DR. T. K. MONRO.

This patient, æt. 46, consulted me at the Royal Infirmary Dispensary in 1893, not about herself, but about her child,

and the peculiar movements of her eyes at once attracted attention. They could not maintain the forward gaze for any length of time, but while she was quietly talking about her children, and indeed under almost all circumstances, they would deviate strongly to the right and somewhat downwards—say several times in a minute—and then regain the mid-position.

She has had trouble with her eyes almost from birth. After patient was born, her mother ~~was~~ ill for six weeks, and as the father was away from home at the time, it is supposed that the eyes were neglected. When she was 6 weeks old, her father returned, and thought she was not seeing so well as she ought to. He consulted Dr. Mackenzie about her when she was 2 months old. This defect of sight was due, patient says, to the presence of "specks" on both eyes. The speck cleared finally off the left eye when she was 7 years old; that on the right still remains. She had measles, followed immediately by a "nervous fever" when aged about 7 years. (This "nervous fever" was on one occasion styled "enteric;" and on further inquiry, it appeared that the doctor thought it a kind of enteric fever with nervous symptoms.) Both the impairment of vision and the rolling of the eyes were worse after the fever, but it was after the fever that the speck cleared off the left eye. It is probable that she had a mild attack of scarlet fever at 11. When she was about 17, a doctor operated on her left eye at the inner side. He wished to operate on the right eye afterwards (the patient says at the *inner* side), but was not allowed. His purpose was to "straighten" the eyes, and "keep them from rolling so much." The one operation is said to have done a little good, but not much. The eyes have rolled as long as patient can remember, and she has no idea when they lost the power of rolling to the left.

A brief examination is (or for a long time was) enough to make patient lose control of the ocular movements. For instance, at the outset she may be able for a little while to look directly forwards, but as she tries to turn her eyes in different directions, they tend more and more to deviate to the right, and may become fixed in that position, and so the facts arrived at—and of these only a small selection are mentioned here—represent the result of a great many examinations carried out at different times at the hospital or at patient's residence.

Visual acuteness is very defective. One note says she counts fingers with the right eye at 1 foot, and with the left

at 2 feet, but there is little doubt she can do better than that. Attempts to read seem to cause pain in the eyes, and when she does try it, she depends chiefly on her left eye, and holds the book close to her face. In childhood she required large-type.

There is a considerable leucoma in the lower part of the right cornea; the iris is adherent to this, and the pupil is small and deformed. Uveal pigment seen in some quantity along the circumference of the right pupil may be taken as evidence of a past iritis. There is slight convergent strabismus.

Spontaneous nystagmus is seen in each eye whether uncovered by itself or along with its fellow. The movements are of small extent, tremulous, not confined to one plane, and not more rapid in one direction than the other. As a rule, the eyes cannot be moved to the left of the mid-position, but palsy is not absolute, and they may at times get beyond the mid-position. It may be impossible for a time to get the eyes out of the position of strong deviation to the right.

The power of lateral movement of the eyes usually found may be summed up thus:—When the left eye is covered, the right eye can be rotated further inwards than when both are uncovered. When the right eye is covered, the left can scarcely be moved out of the position of extreme inward rotation. When both are uncovered, the left eye can be rotated outwards about as far as the mid-position, and the right eye to or even beyond the mid-position.

As to the power of convergence, it is not possible to speak very definitely; and it must be borne in mind that patient has probably not for many years possessed binocular vision. More than once it has been thought that slight convergence did take place on an attempt to look at a near object, and on one such occasion (November, 1897) the left pupil contracted a very little at the same time. On the other hand absence of convergence and of the associated pupillary contraction has been noted (*e. g.*, April, 1895).

The upward movement of both eyes is deficient, though not lost, and ptosis is associated with the deficiency of upward rotation.

The naso-labial furrow is well marked on the right side of the face, but is not so distinct on the left side, particularly at its upper part. The mouth is slightly drawn to the right side, and this difference between the two sides is still better seen when patient is asked to show her teeth. There is no difference between the upper facial muscles on the two sides. Electrical examination, moreover, shows that the zygomatici

respond rather less readily to both faradism and galvanism on the left side than on the right; the polar reactions not being altered. This is consistent with the theory of a slight chronic or old standing lesion of the lower segment (nucleus or nerve fibres).

The palsy of the left external rectus, the great defect of the conjugate movement of the two eyes to the left, the much more extensive inward movement of the right eye when acting alone than when acting conjugately, and the paresis of the left mid-facial muscles, would be accounted for by a lesion destroying the left sixth nucleus and damaging a few fibres of the seventh nerve as they wind round the sixth nucleus, in close apposition to it, before emerging from the pons.

The lesion that may give rise to paralysis of the conjugate movement of the eyes may be a tumour, or hæmorrhage, or softening. The history of this case gives us little information, for the family appear never to have attended to the character of the ocular movements. If the lesion was a tumour, it was never large, and has long been stationary. It is quite possible that it was vascular (obstructive) and associated with one or other of the fevers from which patient suffered in her early years. Hæmorrhage may be excluded on the ground of age, assuming, of course, that the condition has been present from early life.¹

The weakness of the upward movement of the two eyes with slight double ptosis might be accounted for on the theory of a lesion involving part of each oculo-motor nucleus. It is more likely, however, that owing to the presence of the leucoma over the lower part of the cornea, patient has long since learned to associate a downward rotation with the various other movements of the eyes so as to see, as it were, over the top of the opacity.

Repeated attempts were made at first to examine the fundus, but without success; in the case of the left eye, on account of the extreme deviation, and in the case of the right, on account especially of the leucoma and the fixation of the iris.

It may be added that apart from the eyes and face, patient is healthy. She speaks intelligently, and answers questions promptly and in a lucid manner. The head can be turned quite freely to either side, and there is no spasm or weakness about the trunk or limbs. Nothing abnormal has

¹ Dr. John Love suggested at the meeting that the cause may have been polio-encephalitis occurring in association with one of the fevers from which patient suffered, a hypothesis which is perhaps as reasonable as either of those adduced above.—T. K. M.

been noted with regard to movement, sensation, co-ordination, or the knee-jerks. Patient has two children. She never had a miscarriage, or rheumatism, or chorea, and the heart when examined some time ago was normal.

This case has now been under observation for more than four years, and the condition has been in the main a stationary one. Such change as has taken place, however, has been in the direction of improvement. In autumn, 1895, patient and her brother agreed that she could see further to the left than before, and it was found that the left eye could, while the right was covered, reach the mid-position. But in December, 1896, it was noted that the eyes could not get to the left of the mid-position, they were constantly deviating to the right, and while patient was dressing her child, she kept her head turned to the left.

Dr. Rowan said he would like to know the results of ophthalmoscopic examination. If the internal rectus had been cut, it might account for much in the position of the patient's eyes. Was the case getting worse or remaining stationary?

Dr. Ernest Thomson asked if it was certain that the case was not congenital.

Dr. Alex. Robertson said that the affection of the face supported the theory of an internal lesion. He thought it settled that an apoplectic lesion in front of the middle convolutions might induce conjugate deviation of both eyes.

Dr. Monro replied that he was unable to say that the case was not congenital, but it was at least possible that there was a lesion of the nucleus of the sixth nerve, which was not likely to be congenital. The vision was very defective. Ophthalmoscopic examination was impossible in the left eye from the strong inward rotation, in the right from the large leucoma. The condition had been stationary up to 1895. There was then a slight seeming improvement, followed by a return to the old state.

II.—A CASE OF "WORD" WITHOUT "LETTER" BLINDNESS.

BY DR. HINSHELWOOD.

Dr. Hinshelwood's paper will be found in the *Lancet* of 12th February, 1898.

Dr. Alex. Robertson said that the case was one of an uncommon kind. He was not surprised at the difficulty in

recognising words while letters could still be recognised. Letters were more fundamental, and therefore made a deeper impression on the brain, so that a lesion might efface the impressions of words while leaving those of letters. He thought it a pity to increase the number of centres if an explanation referring the symptoms to the same centre would suffice.

Dr. T. K. Monro said that either theory would account for the facts, but *Dr. Hinshelwood's* would only be demonstrated when a converse case was found—namely, a patient able to read words but not letters.

Dr. Love said that, contrary to *Déjerine's* statement, cases had been shown where word and letter blindness were complete, and the patients yet wrote fluently. This might even occur where those centres were much destroyed, as in patients given to writing the impression might be revived from the kinæsthetic memory. Cases such as *Dr. Monro* referred to were already on record. A recent supporter of *Dr. Robertson's* view was to be found in *Horsley*, who considered, with regard to the motor area, that motor memory, muscular sense, &c., were represented at different levels in the same area.

Dr. Middleton said that *Dr. Hinshelwood's* view was the most common with regard to various centres. But this inability to read words and not letters might be explained on a theory similar to *Broadbent's* motor theory. This might perhaps be taken with *Dr. Robertson's* explanation.

Dr. Hinshelwood, in reply, said that the view taken by *Dr. Robertson* and *Dr. Middleton* was the old view of *Broadbent*. From his own case and from others the fact of the increased complexity of the centres was no objection to his theory. Localisation was as yet in its infancy, and careful study of each centre, as in the case of the visual centre, would show that it was made up of a number of distinct areas with distinct functions. The first case which had startled him was that of a Frenchman who consulted him about temporary attacks of aphasia, went home, and died shortly afterwards. The patient's wife wrote to him, stating that before his death she had had to speak in English to her husband in order to be intelligible. On the old theory it ought to have been French, as more deeply graven on the brain. The only explanation was that the memories of different languages were accumulated and retained in different parts of the brain. At the moment he could only refer to one case such as *Dr. Monro* desired.

III.—SPECIMEN OF BRAIN TUMOUR.

BY DR. J. LINDSAY STEVEN AND DR. T. K. MONRO.

Dr. J. Lindsay Steven and Dr. T. K. Monro showed a specimen of brain tumour.

The case of cerebral tumour, specimens from which we desire now to demonstrate, is of interest from several points of view. The multiple nature of the tumour is a point of the greatest importance in reference to treatment. You will see in the specimen that we have one large growth occupying an extensive area of the left hemisphere, and a smaller nodule in the right. Although it is obvious that anything in the nature of a radical surgical operation for removal of the growth was out of the question, treatment by the trephine might have been of great service for the relief of pain by lowering intracranial pressure. Before, however, further referring to the specimen, the following notes of clinical history, carefully compiled by Dr. T. K. Monro, may be submitted for your consideration:—

Mrs. A., 23, housewife, was sent into Dr. J. Lindsay Steven's wards on the 18th August, 1897, by Dr. Burges. He had seen her on the night of the 14th inst., on account of severe bilious vomiting, with some loss of power in the hands and inability to express herself properly in language. On the 15th and 16th, patient seemed rather better, but at 9 P.M. on the 17th Dr. Burges found her semi-comatose, with some rigidity of the right arm. The left pupil was slightly smaller than the right. Three ounces of urine—apparently the whole secretion since morning—were drawn off by catheter, and were found to contain a considerable quantity of albumen. Patient struggled and cried "gi' me, gi' me," and occasionally screamed aloud. It was noticed that the tongue had been bitten.

Some further information was obtained from relatives at the time of admission. Patient had been vomiting since the 9th inst. She had been subject to headache for many years, but recently this had become much more severe. Her speech was first affected about fourteen days before admission, but became so much worse a week later that her husband could not understand her. Loss of power in the right hand was believed to date from the 14th. Patient became unconscious at 3 P.M. on the 17th.

She had measles and whooping-cough in childhood, and had for some time been subject to bronchitis. She never had

scarlet fever, rheumatism, or chorea. She was the mother of two children, the younger of whom (æst. 16 months) she had been nursing until the 14th. There was no history of convulsions before the present illness began, or of œdema in pregnancy, or of deafness, or of discharge from the ears.

The following is from the note made on admission:—Patient is practically unable to express herself intelligibly. Consciousness is in great measure, though not altogether, restored, and patient spontaneously calls attention to the condition of her tongue, which has blood upon it, and has evidently been injured by the teeth. She complains of severe headache in the lower frontal region. She executes some movements she is told to perform, but not all. The tongue, when protruded, deviates strongly to the right side, but there is no conspicuous difference between the two sides of the face. The right arm lies flaccid in the posture of rest. The right leg can be raised from the bed when extended, but patient appears unable to flex the knee. The knee-jerk is well marked on both sides, but there is no ankle-clonus. A trace of each plantar reflex is preserved, but the abdominal and epigastric reflexes are absent on both sides. There is a fairly well-marked *tache cérébrale*. The pupils are moderately sized or slightly large, and equal. Each contracts directly and consensually to light. There is no loss of power or deviation of head or eyes to the right side.

The heart is not obviously enlarged, and its sounds are normal. Slight wheezing anteriorly is the only noteworthy point in the physical examination of the lungs. The feet are free from œdema.

19th August, 1897.—Patient is fairly sensible this morning. She vomited a good deal yesterday and during the night. She is conscious of the prick of a pin on the upper and lower limbs. Temperature last night, 99°; this morning, 97·4°. The urine contains abundant albumen and large numbers of fatty casts. It is high coloured, and deposits abundant urates. Reaction, acid; specific gravity, 1030. The headache to-day is much less severe. She says that formerly the pain was in the right eye.

The albuminuria rapidly disappeared, and by the 25th August its absence was noted.

7th September.—Patient, though certainly better than on admission, has improved very slowly since the first two or three days of her residence. From time to time she has had attacks of frequent vomiting. She scarcely speaks, though

this is perhaps due to lack of will as much as to lack of power. She is extremely emotional, and always low-spirited, so that she weeps with almost no provocation. There is slight weakness of the tongue and face on the right side. The right upper limb is completely powerless, and is all flaccid except the fingers, which are partly flexed. The maximum girth of the right calf is $10\frac{1}{2}$ inches; of the left, $11\frac{1}{2}$ inches. There is no trophic lesion of the skin. Patient does not now complain of headache. Sensation is now found to be defective on the palsied side. When the skin of the arm or leg is struck smartly with a pin point, patient indicates that she is conscious of an impression, yet the pin can actually be pushed through the skin of the fore-arm or leg without any evidence of pain being called forth.

On 10th September, a moderate degree of bilateral optic neuritis was observed. There were no hæmorrhages, and the macular regions were normal.

From this time onwards, the principal symptoms, in addition to the right hemiplegia and aphasia (which now appeared to include word-deafness) and the optic neuritis, were these—Exophthalmos without enlargement of the thyroid; vomiting and screaming at intervals; a considerable degree of blindness though the pupils still contracted to light; increasing weakness of the left upper limb with paresis of the left leg; obstinate constipation; evacuation of most of the urine into the bed; lethargy and obscuration of consciousness; flaccidity of the limbs; exaggeration of the left knee-jerk, the right being normal; or, at another time, the left normal and the right in excess, both plantar reflexes being preserved; absence of abdominal and epigastric reflexes on both sides; retraction of abdominal wall; *tache cérébrale* and subnormal temperature.

The cry alluded to was sudden and loud, and for some days was uttered very frequently. When patient was watched at such times, the appearance of her features was such as to leave no doubt that the scream was elicited by an exacerbation of great pain in the head; latterly she became much quieter under the influence of morphia.

On 20th September, at 3.15 P.M., patient had a convulsive seizure, in which there was twitching of the left side of the face and left arm; in the evening, her temperature was 100° . As late as the 23rd September—the day of her death—it was noted that taste and hearing, and reflex contraction and dilatation of the pupils, were preserved, and that there had been no strabismus. At this period, the temperature tended to rise in the mornings. About 6 P.M. on the 23rd, her lips

became blue, and Cheyne-Stokes respiration set in shortly before death at midnight. The temperature rose from the afternoon up to the end, when it was 106° (in the axilla).

The following is an account of the autopsy, permission to open the cranium having been obtained with the greatest difficulty by Dr. J. Lindsay Steven, who performed the *post-mortem* examination, on the 25th September, 1897 :—

Summary of Post-mortem Examination.—Glio-sarcoma cerebri, two tumours—large one involving left internal capsule, and smaller the right supra-marginal and ascending parietal convolutions.

The dura mater presents normal appearances, and the longitudinal sinus contains a small quantity of loose *post-mortem* clot. There is no undue adhesion between the dura and the bone. On exposing the convolutions considerable engorgement of the vessels of the soft membranes is discovered. It is also at once apparent that there is great flatness of the convolutions of the left hemisphere, with considerable dryness of their surface. This contrasts strikingly with the moist and non-compressed condition of the convolutions of the anterior portion of the right hemisphere. It is noted that the posterior portion of the right surface is drier than the anterior. The structures at the base of the brain present perfectly healthy appearances, and in particular it is noted that there is no trace of exudation either here or in the convexity. On cutting into the left hemisphere its substance is found to be occupied by a very large gliomatous tumour, consisting of a comparatively loose fibrous-looking network, the interstices of which are filled with a thin gelatinous fluid, which slowly drains away after a little. Anteriorly, the greatest length of this tumour is 4 inches, and vertically, a little less. It occupies practically the whole of the upper portion of the internal capsule; and the greater part of the left corona radiata, the lenticular nucleus, and the outer portion of the optic thalamus are completely destroyed by the tumour. The floor of the left lateral ventricle and the caudate nucleus do not seem to have been encroached upon. The fornix and other structures occupying the middle part of the ganglia on the right side are perfectly healthy. On cutting into the right hemisphere, a smaller tumour of the same nature, and about the size of a walnut, is found immediately beneath the grey matter of the supra-marginal convolution. The anterior margin of this nodule rests upon and involves the substance of the middle portion of the ascending parietal convolution.

Further examination of the body not allowed.

Microscopic examination of the tumour by Dr. Charles Workman :—

"Sections have been prepared by embedding a portion of the very soft pliable part of the tumour together with the firmer brain tissue in its neighbourhood from the region of the corpus striatum in celloidin. These have been stained, some with Ehrlich's acid hæmatoxylin, others by Mallory's method, and they show that the tumour is primarily a glioma, which shades gradually into the normal brain tissue, not being encapsuled nor showing any definite line of demarcation. The cells of Deiter are in great numbers, and beautifully demonstrated in the sections stained by Mallory's method. In the meshwork there are large numbers of round cells with much granular protoplasm, and for the most part with single rounded nuclei. These cells appear to lie almost quite loose in the stroma. The soft pliable part has the appearance of a myxomatous degeneration of the tumour, the connective tissue and cells of Deiter being widely separated, and the spaces being filled with clear fluid in which are seen similar cells to those described in the meshwork of the denser part. These round cells are very various in size, many of them being large like mononuclear leucocytes."

The accompanying micro-photographs, by Mr. Archd. Young, M.B., B.Sc., have been prepared from two of Dr. Workman's sections.

Dr. Middleton asked how long the patient lived from the commencement of the symptoms, and was told thirty-eight days.

Dr. Alex. Robertson said that the diagnosis was sufficiently clear. There was one point which he wished to make in connection with tumours of the brain. The patient had complained much of headache, and at the *post-mortem* the convolutions had been found much flattened. Should we not more often trephine, simply to relieve suffering, though not to cure? The operation often did give great relief.

Dr. J. Lindsay Steven said that in Dr. Pringle's ward there was some time ago a patient with all the symptoms of intracranial tumour, whose skull had been trephined nine months ago over the seat of pain. Great relief followed, and lasted for six months, when the symptoms returned. The patient was sent to Dr. Steven, and by him to Dr. Pringle. Trephining was again done. No tumour was found, but the pain was greatly relieved.

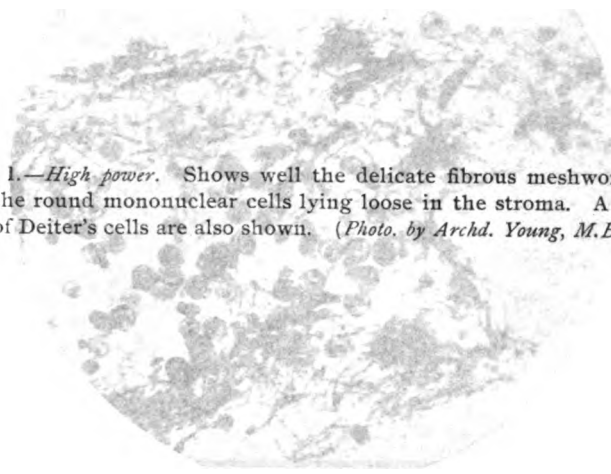


FIG. 1.—*High power.* Shows well the delicate fibrous meshwork, with the round mononuclear cells lying loose in the stroma. A number of Deiter's cells are also shown. (*Photo. by Archd. Young, M.B., B.Sc.*)

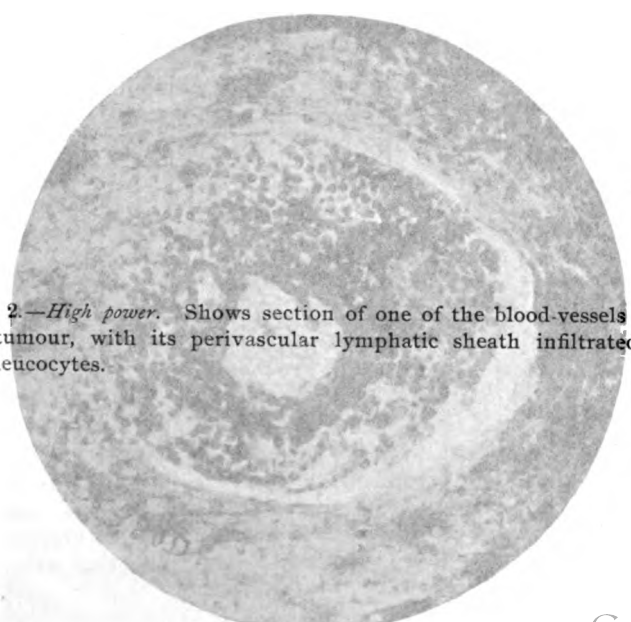


FIG. 2.—*High power.* Shows section of one of the blood-vessels of the tumour, with its perivascular lymphatic sheath infiltrated with leucocytes.

THE LIVER OF THE
RAT

The liver of the rat is a large, reddish-brown organ, situated in the upper part of the abdominal cavity. It is divided into two main lobes, the right and left lobes, which are separated by a deep fissure. The surface of the liver is covered with a thin, translucent capsule. The right lobe is larger and more rounded, while the left lobe is smaller and more elongated. The liver is connected to the stomach by the hepatic portal vein, which carries blood from the digestive organs to the liver. The liver also receives blood from the inferior vena cava. The bile ducts, which carry bile from the gallbladder to the duodenum, are also located in the liver. The liver is a vital organ for the rat, as it is responsible for the metabolism of nutrients and the production of bile.

THE LIVER OF THE
DOG

The liver of the dog is a large, reddish-brown organ, situated in the upper part of the abdominal cavity. It is divided into two main lobes, the right and left lobes, which are separated by a deep fissure. The surface of the liver is covered with a thin, translucent capsule. The right lobe is larger and more rounded, while the left lobe is smaller and more elongated. The liver is connected to the stomach by the hepatic portal vein, which carries blood from the digestive organs to the liver. The liver also receives blood from the inferior vena cava. The bile ducts, which carry bile from the gallbladder to the duodenum, are also located in the liver. The liver is a vital organ for the dog, as it is responsible for the metabolism of nutrients and the production of bile.

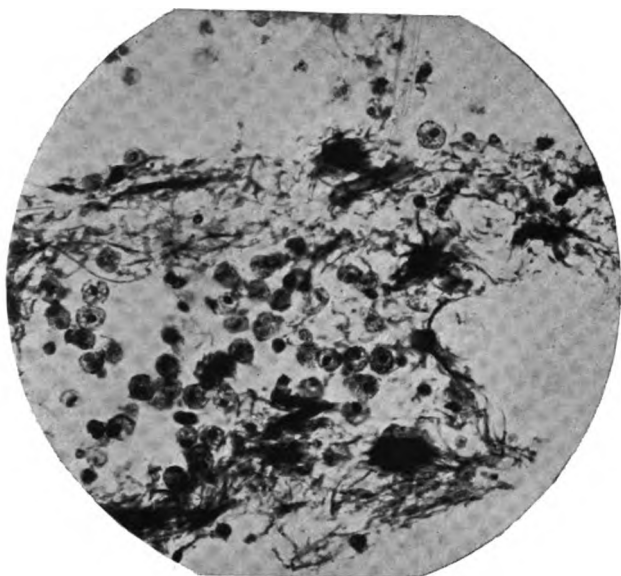


FIG. 1.



FIG. 2.

GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY.

SESSION 1897-98.

MEETING V.—14TH MARCH, 1898.

The President, DR. DONALD FRASER, in the Chair.

I.—CASE OF ACROMEGALY.

BY DR. NAPIER.

Dr. Alex. Napier showed photographs and skiagraphs from a patient suffering from acromegaly, and made some remarks on the clinical aspects of the case. As Dr. Napier intends to publish a detailed account of the case in the *Glasgow Medical Journal*, the following is only a brief summary:—

M. C., æt. 40, admitted to Victoria Infirmary on 24th December, 1897, dismissed "improved" on 2nd April, 1898. Patient's illness (typical acromegaly) began with "diphtheritic" sore throat and acute and permanent suppression of menses. Alteration of voice, features, hands and feet, characteristic; very considerable goitre, involving both lobes and isthmus of thyroid body; slight exophthalmos, with absolute blindness (optic atrophy) of right eye, and atrophic hemianopia of left; divergent squint of right eye; heart and lungs normal; intelligence unaffected, but memory defective; marked hemiatrophy noticeable, especially in upper limbs, the left being the smaller; urine scanty, with greatly diminished elimination of urea; muscular system soft and flabby; ankle clonus in left; plantar reflex exaggerated on both sides; knee reflex increased in left, normal or diminished in right. Blood normal as regards corpuscles, but with 75 per cent hæmoglobin.

Treatment consisted mainly in administration of ovarian, thyroid, and pituitary glandular preparations.

Result.—Considerable improvement; speech quicker and sharper, and with less effort; tongue much smaller and more mobile; thyroid body diminished, especially on right side; lips thinner, especially lower lips; mouth more firmly closed; salivation lessened; no lachrymation; features, as a whole markedly smaller, though it must be borne in mind that weight fell off to the extent of 10 lb.

Dr. Fraser referred to a similar case which he hopes to bring before the Society in May.

Dr. Sutherland said that he was specially interested in

this case, as he had seen the patient on two occasions previously, in August and again in October, 1896. He could compare and contrast her condition now with what it was then. One of the most striking features, when first seen by him, was the tense swelling of the neck. It was not then confined to the thyroid gland as it is now. The swelling of the tongue also is undoubtedly less; the hands, feet, and face generally present no definite change. When first seen she was not aware of any visual change; there was no squint, but distinct exophthalmos.

Dr. Middleton referred first to the skiagraphs shown, and said that his experience of skiagraphy in this condition was disappointing; and considered that photographs show the condition better. He was struck with the combination of symptoms present, exophthalmos, enlarged thyroid, and thinks it possible that acromegaly and exophthalmic goitre may be here combined. It is said by some that joint affections exclude acromegaly, but he referred the Society to a case already reported by him where such were present.

Dr. Fleming pointed out the great similarity that existed between the skiagraphs of rheumatoid arthritis and those of this case. There is the same expansion of the phalangeal base with apparent narrowing of the shaft. The articular ends are also flattened and cup-shaped.

Dr. Napier, in reply, said that *Dr. Middleton's* remarks were suggestive, and illustrate the pathological difficulty of such cases. Myxoedema and acromegaly are often associated with the changes which occur at the menopause; a similar relationship also exists between Graves' and Raynaud's disease. *Dr. Fleming's* remarks are interesting, also, in view of the fact that the joint affections in this case were regarded for many years as those of rheumatoid arthritis, for which she was sent to the various spas and wells for treatment.

II.—SUCCESSFUL OPERATION FOR RUPTURE OF THE BLADDER.

By DR. DALZIEL.

Dr. Dalziel showed a patient operated on successfully for rupture of the bladder involving the prostate and peritoneum.

The patient was admitted to the Western Infirmary in September, 1897, having fallen 20 feet on to some planks. He was in a state of extreme collapse, and was found to have a fracture of the right femur, near the great trochanter, on which he had fallen. He also suffered from pain in the lower part of the abdomen, a desire to micturate, with inability to

do so, though he had not voided urine for seven hours before his accident. Dr. Eric Wilson, the house surgeon, passed a catheter and obtained some blood. There was some dullness in the lower part of the abdomen, extending 2 inches above the pubes, and filling the right iliac fossa. Rupture of the bladder was diagnosed, and the diagnosis confirmed by immediate laparotomy. A $3\frac{1}{2}$ inch incision was made in the middle line from the pubes upwards. Behind the muscles much extravasated blood was found, evidently continuous with a large extra-peritoneal collection of blood in the pelvis and the right iliac fossa. The peritoneum was opened above the bladder and a small quantity of blood-tinged fluid found and removed. As the bladder was apparently distended with blood-clot, it was freely incised in the middle line and emptied of blood-clot, when very active hæmorrhage was found proceeding from a rent in the floor of the bladder. This rupture extended from between the ureters, where it had apparently involved the pouch of Douglas, forwards to the left side of the urethral orifice, so involving the prostate. The hæmorrhage was so considerable, and the patient's condition so bad, that it was impossible to arrest the flow by ligation. The bladder was therefore packed with aseptic sponges, the peritoneal opening closed, a drainage-tube placed in the pelvis in front of the bladder, and the wound in the bladder stitched to the skin. It was found that the packing in the bladder entirely controlled the bleeding.

During the operation under chloroform the patient had two attacks of alarming syncope, and for the two subsequent days remained in a state of collapse from shock and loss of blood. On the second day the sponges were removed and the bladder irrigated every two hours with saturated boracic lotion.

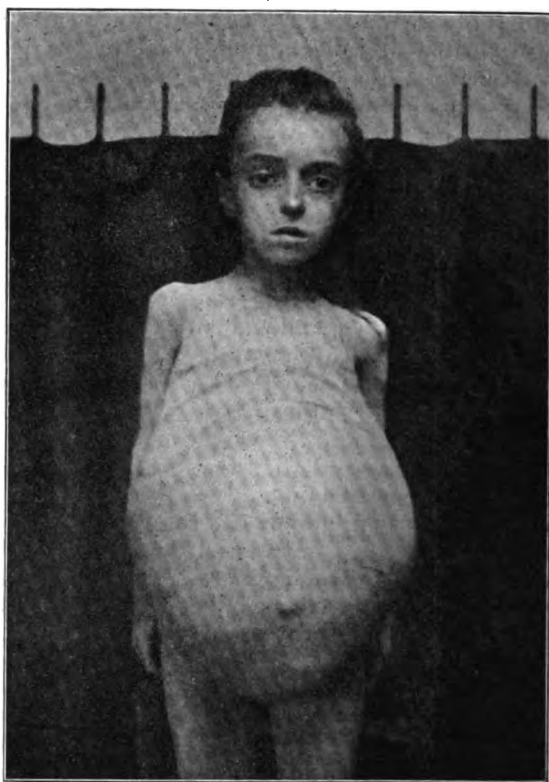
Four days later the stitches fixing the bladder to the skin were removed, and the bladder allowed to fall back. The wound rapidly closed and was quite healed in three weeks. At no time was there any rise in temperature or other untoward symptom after the first few days. The patient was dismissed from hospital when his femur was firmly united, about the end of the ninth week.

He afterwards suffered from a small ventral hernia near the middle of the scar, but he had no trouble with his bladder. The situation and direction of the rupture, in the absence of any fracture of the pelvis, was noteworthy, and might be accounted for by the lateral application of the force to the distended bladder.

III.—SPECIMENS.

BY DR. DALZIEL.

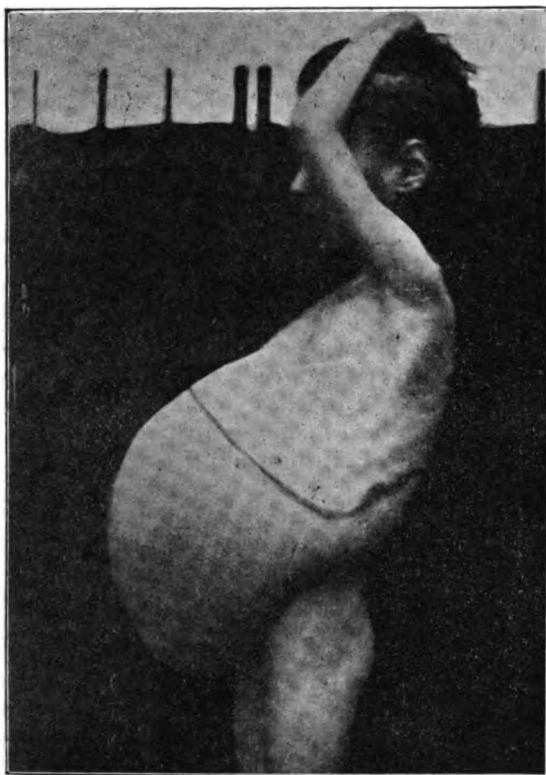
1. *A large retro-peritoneal lipoma from a child.*—The specimen consists of a large mass of fat of fairly regular



outline, equal in size to two average adult heads, and weighing 13 lb. There is lobulation especially marked at one side, and on section a wheel-like arrangement is seen. Microscopically it proves to be a pure lipoma.

The child, aged 8 years, was admitted to the Royal Hospital for Sick Children on 18th December, 1897, suffering from a swelling of the abdomen of some years' duration. When

2 years old the abdomen was noted as protuberant, and treated for tuberculosis. Pain was complained of two years ago, but during the last year the only symptoms have been recurrent attacks of vomiting and constipation. There had been for long great thirst. On admission the patient was small, ill-nourished, and emaciated, the face sallow and



prematurely aged in expression. The abdomen was much distended and pyriform in shape, the apex pointing downwards. There was bulging in both flanks, but especially in the right. The veins over the abdomen were prominent and tortuous. A sensation of fluctuation was readily elicited through the abdomen from side to side. Percussion gave a dull note all over the abdomen, except in the neighbourhood

of the xiphoid cartilage. On palpation the outline of a tumour of somewhat firm consistence could be made out. The measurements of the abdomen were—from pubes to xiphoid $16\frac{1}{2}$ inches; pubes to umbilicus, 6 inches; circumference at level of umbilicus, 26 inches; and at 4 inches above umbilicus, 34 inches.

The urine contained a considerable quantity of albumen and a few leucocytes.

On 27th December an attempt was made to remove the tumour, but ere the abdominal incision was completed the patient died suddenly from syncope. The tumour was found to be adherent to the spine, the attachment being equally distributed on both sides and extending from the sacrum to the crura of the diaphragm. The posterior parietal peritoneum covered the tumour, and both ureters coursed over the tumour as much distended thin-walled tubes. The intestines were displaced upwards. After the mass of the tumour was removed numerous "scone"-like masses of fat were found covering the spine.

Dr. Dalziel remarked on the rarity of lipoma in this situation, especially in such a young subject. The question of diagnosis could never be an easy one; the great majority of recorded retro-peritoneal lipomas had not been diagnosed as such. Of retro-peritoneal lipomas only about 4 per cent were, as in this case, prevertebral in origin.

2. *A large gall-stone removed from the common bile-duct.*—The gall-stone is the shape of a truncated cone with facets on either end from contact with two smaller stones, the three having been removed from the common bile-duct of a lady who had suffered for fifteen years from recurrent jaundice and biliary colic. The patient was 52 years old, somewhat jaundiced, but thin and wiry. An incision was made by the outer border of the rectus. The gall-bladder was empty and shrivelled. The common bile-duct was found much distended, and at its lower end somewhat behind the duodenum. The large calculus could be felt. With considerable difficulty the duct was brought within reach, and the calculi removed through a longitudinal incision. Large quantities of bile flowed from the distended duct and its tributaries and was removed by the gauze packing in the wound and the use of a syringe. The incision in the duct was then closed by three rows of fine silk sutures. No drain was used, and the abdominal wound was firmly sutured in layers. The patient made uninterrupted progress to complete recovery.

The calculus weighed 166 grs., measured $1\frac{1}{2}$ inch by $1\frac{1}{4}$ inch, and was largely composed of biliary concretion, probably round a cholesterine cone.

3. *Photographs and microscopical preparations from a case of papilloma involving the whole of the large intestine and lower part of the ileum.*—Dr. Dalziel showed a photograph of a large intussusception protruding through the left inguinal colotomy wound, and also a number of papillomata removed from the everted bowel.

The patient, F., aged 10 years, had been operated on about two years before, for prolapse of the rectum, with papilloma. Two inches of mucous membrane (studded with papilloma) had been removed, with subsequent complete restoration of the anal function. It was known that papillomata existed higher up, but these gave no trouble for eighteen months, when symptoms of intestinal obstruction occurred, and for which a left inguinal colotomy was performed with considerable relief, though again it was noted by palpation that the papillomata extended beyond the sigmoid flexure. Two weeks after the colotomy had been performed the child had a violent attack of abdominal pain, and soon thereafter an intussusception protruded from the colotomy opening. The protrusion, as shown in the photograph, equalled a large clenched fist in size. Laparotomy was performed on the other side of the abdomen, and the herniated intussusception reduced with much difficulty. Many of the larger papillomata were removed after ligation of their pedicle. The whole of the mucous membrane of the colon and lower foot of the ilium were thickly studded with these pedunculated fleshy growths, which the microscope showed to be adenomata, the swallowing of one of the larger of which by the small intestine had led to the intussusception.

The child had made a good recovery from the laparotomy, and there had been no further trouble with the bowels. Occasional slight hæmorrhage pointed to sloughing of papillomata, and it was hoped that nature might work a cure as so usually happened in the similar affection of the rectum, from which pedunculated adenomata generally spontaneously disappeared. The case seemed worthy of record, as presenting a difficult surgical problem, and on account of the complications met with during the treatment.

Mr. Maylard thought the cases highly interesting. A rupture of the bladder so low down is uncommon in his

experience. Some time ago he conducted a series of experiments with a view of finding out the most frequent site and the usual direction of the tear in rupture of the bladder. This he found to be 2 inches above the trigone, and usually vertical. Mr. Maylard also referred to the difficulty of suturing the bladder when the rupture is so far down, and mentioned a case where such difficulty was experienced. In regard to the case of rectal papilloma it is exceptional to have the small bowel involved.

Dr. Sutherland thought the term adenoma should be used instead of papilloma in this case, as in structure the new growth is glandular.

THE FORFARSHIRE MEDICAL ASSOCIATION.

THIS Society met in the University College, Dundee, on Friday, 1st April, at 4 P.M., Dr. A. Campbell, President, in the chair.

DR. MACEWAN showed a case of reproduction of the humerus after operation for acute necrosis, and also a case after Estlander's operation.

MR. GREIG showed a case of congenital malformation of the anus rectified by operation, the rectum opened in front of the posterior fourchette. Mr. Greig also showed four abdominal cases—(1) Case of recovery after operation for volvulus; (2) case after operation for appendicitis, with retrocaecal abscess; (3) case after coeliotomy for abdominal pain; (4) case of incurable malignant tumour in abdomen, in which the tumour had diminished somewhat, and the patient had put on weight.

DR. BUIST showed a series of specimens by Tores' method.

The PRESIDENT read notes of a case of tropical abscess of the liver. The patient, aged 51, had spent eighteen years in Calcutta, enjoying good health till she had a severe attack of malarial fever. Her condition showing no improvement after three months, she was therefore ordered home. On 17th August, 1897, patient was found much exhausted; temperature, 103°; liver enlarged upwards; no pain; no diarrhoea; no jaundice; sweats and chills. Towards the end of August the patient had a sharp attack of perihepatitis. Aspiration

was done at first without success, but on 18th September 3 pints of purulent fluid were withdrawn, the needle being inserted in the right nipple line in the sixth intercostal space. The dulness, which had after this diminished, again increased. On 25th September a portion of the seventh rib was excised in the right nipple line, the liver was incised, and the abscess cavity evacuated. A drain was inserted into the most dependent part between the eighth and ninth ribs in posterior axillary line. The drain was removed in December, and the patient is now as well as ever.

Dr. MacEwan spoke of a case he had had under his care.

Dr. Mackie Whyte referred to the absence of fluctuation, and also to the absence of dysentery in the case read.

DR. PIRIE read notes on a simple method of clinical bacteriology, and showed several micro-photographs, and also tubes of cultivations.

DR. FOGGIE read notes of a case of a man who had received an injury to the lower lumbar vertebræ by a fall from a scaffolding. Paraplegia from the hips downwards had existed at first, but the various movements at the hip- and knee-joints were soon restored; while the initial retention of urine and constipation, after passing through a stage of incontinence, showed now a modified control. Muscular movements below the knees and reaction to the faradic current were still absent. Neither the knee-jerks nor plantar reflexes had as yet returned. There was well-defined total anæsthesia over the anus and in front, and also lower down over both heels. Partial anæsthesia existed over all the skin below the knees, except on the inner sides, and was connected by a narrow band running up the back of the thighs with upper totally anæsthetic area. Thermo-anæsthesia was practically co-extensive. Vasomotor and trophic changes were present. The primary lesion had affected the lumbar region of the cord or its roots as high as the third segment or root, but the permanent lesion had been almost limited to the sacral or its roots. Possibly the injury was one of the cauda equina.

REVIEWS.

A Contribution to the History of the Respiration of Man, being the Croonian Lectures delivered before the Royal College of Physicians in 1895, with Supplementary Considerations of the Methods of Inquiry and Analytical Results. By WILLIAM MARCET, M.D., F.R.C.P., F.R.S. London: J. & A. Churchill. 1897.

DR. MARCET has been engaged for the last twenty years in the investigation of the phenomena of respiration, and has embodied the main results obtained in four lectures now published, together with a supplement containing accurate details of the instruments used and methods of investigation adopted, and considerations with regard to the influence of volition on respiration, the results obtained by breathing air in closed vessels, and the effects of the inhalation of atmospheric air mixed with varying quantities of oxygen, hydrogen, and carbonic acid gas.

The first lecture deals with the relations of the oxygen breathed to the life of the tissues. The manifestation of life always depends upon tissue metabolism in which oxygen plays a part. Life may be maintained in a latent form, as in seeds, for an indefinite period, so long as oxygen is present in a molecular condition in the living substance, but not entering into active combination with it. When the living tissue is active it uses up the oxygen it contains and resorts to the atmosphere for more. This chemical transformation liberates energy in the form of motion and heat. Marcet erroneously states that in cold-blooded animals the heat is entirely translated into motion, and therefore cannot be tested by a thermometer. As a matter of fact, the so-called cold-blooded animals are almost invariably warmer than the medium in which they live, and the difference in temperature can be detected by the thermometer. He shows in an interesting manner the first effect of cold in increasing the vital activity as evidenced by the increased amount of CO_2 liberated, and the subsequent hurtful results of prolonged exposure to cold. The effect of muscular exercise upon the general temperature of the body is considered, and strangely enough it seems to be demonstrated that in different persons different results are obtained; in one, the general temperature may be increased, in another lowered.

In the second lecture, after giving a brief *résumé* of the chief experimental investigations as to respiration, during the last half century, Marcet describes the apparatus employed in his experiments, consisting essentially of an equipoised bell-jar, in which the air of respiration was collected for analysis, while by means of a stylet from the jar to a revolving cylinder he was able to obtain graphic tracings indicating the volume of air breathed. Upwards of eighty of these tracings are reproduced, and as the tracing of normal respiration is always placed beside those due to experimental variations, the eye sees at a glance the nature of the results obtained. One important principle is now stated, viz., that there is no direct connection between the CO_2 produced and the oxygen consumed. Oxygen is stored up in reserve in the blood and tissues, just as glycogen, proteid, or fat may be. Different forms of respiration are studied—(1) Automatic, in repose; (2) laboured breathing, the body being at rest; (3) breathing during muscular exercise; (4) breathing while the body is in repose but the mind actively at work towards the exercise of volition. Under the second heading we have the effects of sneezing, yawning, &c., described.

The influence of volition on respiration is discussed in the third lecture. The point specially developed in this regard is that volition without response towards any kind of muscular exercise is attended with increased pulmonary ventilation and absorption of excess of oxygen—this oxygen being necessary towards the exercise of volition, and used in the motor centres of volition. The motor centres may be surcharged with oxygen, with a corresponding development of muscular force. Volition being tired out, or, in other words, the oxygen in the motor centres being used up, the muscles refuse to work. Defective supply of oxygen, as in the air of high altitudes, causes weakening of volition, and this carried to excess gives rise to a comatose or numbed condition in which, though consciousness may be retained, the power of voluntary effort is completely abolished. Reference is made in this connection to the interesting observations of Glaisher and Paul Bert.

The influence of climbing and of respiration at high altitudes are the main subjects of the fourth lecture. Finally, the effect of inhalation of air containing various quantities of CO_2 and of re-breathing one's own expired air are studied, and the condition of the blood during coughing is examined. Asthma is seen to be aggravated by excess of CO_2 in the blood and deficiency of oxygen in the respiratory centres. The beneficial influence of respiratory exercises, and more especially of a

series of deep inspirations at the beginning of the asthmatic spasm, is examined and explained. Marcet recommends cycling exercise as especially valuable as a means of respiratory training, and if his ideas upon this point become generally known we may look for a new and alarming development of wheezing among the rising generation who feel that life without a bicycle is not worth living.

The lectures do not touch upon many problems of respiration, such as the anatomical mechanism of respiration, the innervation of respiration and the like, but so far as they go are clear, suggestive, and interesting, and well worthy of perusal by students of this important branch of physiology.

The Tallermann Treatment by Superheated Dry Air. Edited by ARTHUR SHADWELL, M.A., M.B.Oxon., M.R.C.P. London: Baillière, Tindall & Cox. 1898.

IN the *Glasgow Medical Journal* for February, 1896, we described this mode of treatment at some length, in our review of a work entitled *The Tallermann-Sheffield Patent Localised Hot-Air Bath*. The present volume discusses its application in cases of rheumatism, gout, rheumatic arthritis, stiff and painful joints, sprains, sciatica, and other affections. There are notes of cases, reports by medical men, and sixty-three plates, mostly to show the condition of patients before and after treatment by the Tallermann apparatus. We are glad to find such a large body of evidence in favour of the great therapeutic value of superheated dry air, and the importance of this agent, especially in the treatment of obstinate rheumatic affections, is now becoming appreciated not only in Britain, but also in France, Canada, and the States. Though the appliance has been patented by a layman, its proprietor has all along worked in co-operation with the medical profession, and not directly with the lay public. We welcome the publication of this new treatise on the subject.

A Handbook of Therapeutics. By SIDNEY RINGER, M.D., and HARRINGTON SAINSBURY, M.D. Thirteenth Edition. London: H. K. Lewis. 1897.

NINE years have elapsed since the publication of the twelfth edition. During this time many new medicines have been in

use by the physician. The book was, therefore, urgently in need of revision, if it was to maintain the good position it has so long held among the profession. We notice, with pleasure, the fact that this new edition is published under the joint authorship of Ringer and Sainsbury.

The book retains its old form, and is, as is claimed for it, essentially a book on clinical therapeutics, the medicines being dealt with from the standpoint of the practical physician. There is no detailed discussion of the pharmacological action of the drugs. While the whole book has been revised, and many changes and improvements are evident, the chief point to note is the new matter which has been added.

Among drugs we notice the addition of the following:—Chloralamide, sulphonal, trional, tetronal, agaricus, eucaine, antifebrin, exalgine, naphthalene, β naphthol, and piperazine, but there has been no attempt to include the many new drugs in the market which have yet been practically untried by the physician.

In the section describing the use of the "wet pack," we notice the reference, not found in the previous edition, to its use in cases of insomnia, and especially to the method recommended by Weir Mitchell under the name of "the drip sheet." We notice, too, the insertion of a short account of the Nauheim-Schott treatment of cardiac failure, and in reading it a very pertinent remark is worth noting, viz., "there is probably nothing mysterious in the good effects of a carefully supervised course at Nauheim, in suitable cases, if we are content with gradual improvements in pulse-rate and pulse-filling, and do not demand sudden shrinkings in heart volume and sensational cardiac diagrams." If this attitude had been more generally adopted, there would have been less disappointment experienced by those who have tried this form of treatment.

Another important addition is the section on serum-therapeutics, in which are discussed—

1. "The use of serums or extracts obtained from organs or tissues derived from the bodies of healthy animals in the treatment of diseases in which the corresponding organs or tissues are held to be at fault. The term 'isopathy' has been used to describe this method."

2. "The use of serums derived from the bodies of living animals which have been subjected to the influence of various pathologic micro-organisms or the products of their activity. Such serums are employed in the treatment of the diseases which these same micro-organisms generate when they gain access to the human body."

More advance has taken place of late in this line of therapeutics than in any other, and we have the subject fairly treated and quite in sufficient detail to indicate its value at present as a mode of treatment.

Those who have been in the habit of referring to this handbook will remember that a feature of it is the presence in the latter pages of a series of useful recipes in invalid cooking. These have been retained, but supplemented by an introduction on dietary for invalids, in which reference is made to certain systems, especially the extreme one of Dr. J. H. Salisbury, which has received some considerable support both from the profession and from the public. A section on digestive ferments has also been included in this edition.

The book is well indexed, there being both the general index and an index to diseases, with their different modes of treatment.

The book, from the addition of the new matter indicated, is increased in size by over one hundred pages.

We believe that this new edition of this popular handbook will be much appreciated by the profession.

Human Nature: its Principles and the Principles of Physiognomy. By "PHYSICIST." Part I. London: J. & A. Churchill. 1897.

It is probable that "Physicist" will rather attract the attention and secure the credit of those who are content with a superficial, than those who require a thorough method of interpreting human nature. He belongs to the class of pseudo-philosophers who, instead of studying the mind by investigating the nature of its various faculties and their manifestations, profess to tell its nature from observations on the head or face or hands, or the general morphology and physiology, adult and developmental, of the individual. This is only a less superficial way of investigating human nature than by observing the stars or chemical reactions. "Our goal," he says, "is to understand human nature. In order to know what to expect of any individual, it is necessary to be familiar with the conditions and the laws of nature which bring him into existence and assist his development." One is almost as likely "to know what to expect of any individual" from having had lessons in astronomy, as in embryology. The study of human nature is very remotely related indeed to either of these sciences. Yet it shows, as still existing, a

curious and persistent perversion of the human mind; for in all ages sciences and arts far removed from mental science and the art of foretelling events have been considered to pertain directly to, or be identical with, these. The character of an individual is manifested by certain sensible signs, and from these, deductions as to future actions may be drawn. But even one possessed of much experience and sound judgment, and having an intimate acquaintance with the individual, cannot from these data make more than a general, and can never make a special, forecast of what anyone may be expected to do. That power of choice which everyone in sound mind believes he possesses, even though the belief be merely a well-contrived delusion, as many have contended, baffles all attempts at prognostication.

But we are disappointed with "Physicist" as he proceeds, for the basis from which he reasons becomes narrower, instead of widening out. His bias is obviously due to his predilection for ancient medicine. He is a humourist-revivalist. But unfortunately for him the times show no tendency to revert to that theory. "The temperaments," he says, "are the time-honoured basis of our constitutions. They commence to be separated in the division of the blastodermic cells of the embryo into epiblast, mesoblast, and hypoplast." The variations in the relative development of the blastodermic layers determines the individual's nature as being relatively melancholic, sanguineous, or phlegmatic. The temperament of the adult is discoverable from the tint or colour of the skin. Thus, by a preordination of nature we have three primary embryonic layers, three primary temperaments, and three primary colours duly related to one another. It is from observation of these colours and their combinations that "Physicist" knows "what to expect of any individual." The coloured plate at the end of the book forms a guide or key to his system, besides forming a kind of summary.

Exercises in Practical Physiology. By AUGUSTUS D. WALLER, M.D., F.R.S. Part III: Physiology of the Nervous System—Electro-Physiology. London: Longmans, Green & Co. 1897.

THIS volume forms Part III of a series of exercises and demonstrations to accompany the author's *Introduction to Human Physiology*, and is primarily intended to facilitate the class-work of his laboratory. The directions given are

addressed to advanced students who have properly expended one year in the study of physiology. The student is first shown the various electro-physiological instruments, such as galvanic cells, keys, commutators, galvanometers, induction apparatus, rheostat and rheochord, and their uses carefully explained and illustrated by diagram. The action of condensers is worked out. The capillary electrometer, chronograph, and the application of photography are next explained, and the method of making electrometer records.

Having mastered the apparatus, various nerve-muscle experiments are taken up. Electrotonus is fully considered, and the conditions which influence the excitability and conductivity of nerve and muscle. The action of anæsthetics, and the electrical variations of the frog's and mammal's heart are investigated. The sounds and heat produced during muscular contraction, tendon-reflex time, and reflexes generally, and, finally, sensory reaction time, discrimination time, and volition time are fully and clearly worked out. The instruments used are of the latest type, as, for example, Pfeil's signal in taking chronographic tracings where the marker responds more readily to all rates of vibrations than in the older forms of chronograph.

The features of the book are the clearness and fulness of the directions, and the constant use of diagrams to show the grouping of apparatus in different experiments; the advanced nature of the work, and the introduction of many new experiments and methods; the excellent arrangement so that we pass in sequence from experiment to experiment as in a book of Euclid; and the frequent reference to simple experiments on man as well as on the lower animals.

There are a few slips which can be readily corrected in later editions, as when the author speaks of a vertical *spot* of light (p. 41), and of something being omitted for the sake of *distinction* (p. 59); the diagram Fig. 50 would suggest faradic instead of galvanic excitation.

On the whole the book can be cordially recommended to practical workers in physiology.

Sleep: its Physiology, Pathology, Hygiene, and Psychology.

By MARIE DE MANACÉINE (St. Petersburg). Illustrated.
London: Walter Scott, Limited. 1897.

THIS is a work which is likely to be read with much satisfaction, on account both of the instruction it conveys, and the

interest it excites. The authoress has obviously mastered her subject, and what this means may be inferred from a glance at the bibliographies which follow the four chapters into which the book is divided. The headings of these chapters are indicated in the secondary title of the work, and, after looking at the detailed table of contents, one is prepared to admit that most of the field is covered. The style is clear and agreeable, with a spice of authority in it. Many of the facts brought together are of great importance, but with regard to some assertions made by the writer we should like to reserve our judgment. Thus, she says that temporary "albuminuria is always observed in those boys or girls who, once in bed, sleep continuously till morning, not waking even to empty the bladder." The male reviewer believes he will be pardoned for inquiring whether medical studies have not a deleterious effect upon womanly character when he reads that this authoress brought about the deaths of ten puppies by depriving them of sleep for four or five days, and when she says (speaking from her own observation) that the puppy deprived of sleep for three or four days presents, as a rule, a more pitiful appearance than one which has passed ten or fifteen days without food. At the same time let all due credit be given to the writer for this admirable treatise. The work has already appeared in Russian and in French, and the English edition has been enlarged and revised by the authoress, who acknowledges her indebtedness to the editor for various additions and references. The abundant recognition given to the work of British observers is a gratifying feature of the book.

Psilosis or "*Sprue*:" *its Nature and Treatment*. By GEORGE THIN, M.D. Second Edition. London: J. & A. Churchill. 1897.

PSILOSIS or "sprue" is a disease little familiar to physicians in this country; and to those who wish to know more of it, this new edition, containing as it does the most recent observations on the subject, cannot be otherwise than a useful and welcome publication.

Psilosis, Dr. Thin tells us, may be described as a "chronic affection of the intestine, usually associated with irregularity or looseness of the bowels, localised inflammatory lesions of tongue and the buccal mucous membrane, and with tenderness of the gullet." The author gives a detailed account of the signs and symptoms of the disease; and in an appendix there

are recorded the clinical histories of some thirty cases, which serve to amply illustrate the various points alluded to.

Treatment is dealt with in considerable detail. There are likewise chapters on the pathology and on the geographical distribution of the disease. Its relation to other forms of diarrhoea is considered, special stress being laid on the points which distinguish it from the diarrhoea alba, or "hill diarrhoea" of India.

The book is well printed and well illustrated, and we have much pleasure in recommending it to our readers.

Ringworm and Alopecia Areata: their Pathology, Diagnosis, and Treatment. By H. ALDERSMITH, M.B. Lond., F.R.C.S. Fourth Edition. London: H. K. Lewis. 1897.

THIS work has undergone so much enlargement and alteration since it was first reviewed in this *Journal* that the fourth edition calls for a separate notice. The whole pathology of ringworm has been elucidated by Sabouraud's recent discoveries of the different forms of fungi, and the papers by various authors to which they have given rise. These are very fully described and analysed in this edition, and the various forms are illustrated by a series of plates. Sabouraud's views upon alopecia areata also receive full discussion, the author's conclusion being that the micro-organisms found by him are not really the cause of the disease. He states that he has never seen any case of alopecia areata in Christ's Hospital School communicate the disease to others, and is entirely opposed to the statement of Crocker that 95 per cent of all cases of alopecia are parasitic. The rest of the volume is occupied with a discussion of the diagnosis and treatment of ringworm, on which the author's views have not undergone much alteration. The changes and additions have made the volume somewhat bulkier than is altogether convenient, but it will be found to be a very complete guide to the study of these troublesome diseases.

The Examination of the Eye. By SIMEON SNELL. Edinburgh and London: Young J. Pentland. 1898.

THIS is a book written for students, and we can cordially recommend it to them. It is, of course, merely introductory,

but so far as it goes it is excellent. The sections dealing with the testing of the field of fixation and with the investigation of strabismus are especially good. No adequate attempt is made to describe the various errors of refraction, but that could scarcely have been expected in a book of this size. We notice that the rotary prism first invented by Herschel and modified by Landolt for ophthalmic purposes is simply called "Risley's," and that the double prism is called "Maddox," although a perfectly similar prism has been for many years used for the purpose of measuring wave lengths. It was employed for that purpose for a very long time before the genius of Maddox applied it to the purposes of ophthalmology.

The Eye as an Aid in General Diagnosis. By E. H. LINNELL, M.D. Philadelphia: The Edwards & Docker Co. 1897.

THIS is a very good book, and one which we can recommend. It is not so full or exhaustive as the volume by Max Knies on the same subject, but it certainly contains a large amount of most useful and well-arranged information. It might perhaps have been more freely illustrated, and more details should have been given as to methods of examination and as to the instruments employed.

The volume, however, contains a clear statement of the lesions of the eye which are found in association with the various diseases of the body, and forms a reliable guide to the subject.

Practical Handbook of the Diseases of the Eye. By D. CHALMERS WATSON, M.B., C.M. With Nine Coloured Plates and Twenty-four Illustrations in the Text. Edinburgh: William F. Clay. 1897.

THIS little volume is designed for the use of students, and is based, the author says, on the teaching of Dr. Argyll Robertson. Without concurring in everything it says or omits to say, we quite recognise that the work does credit to the writer, and we are prepared to learn that the arrangement and quality both of the text and of the illustrations will render it helpful to those for whom it is intended.

Nettleship's Diseases of the Eye: a Manual for Students.
Sixth Edition. Revised and Edited by W. T. HOLMES
SPICER, M.A., M.B., F.R.C.S. London: J. & A. Churchill.
1897.

THE fact that the reputations both of Dr. Nettleship and of his *Manual* are already long established makes it needless to do more than mention the appearance of this new edition. Mr. Holmes Spicer is responsible for everything in which it differs from its predecessor, and a short examination of the work satisfies us that it deserves to retain its position as one of the best available text-books of ophthalmology.

The Diseases of the Nervous System: a Handbook for Students and Practitioners. By CHARLES E. BEEVOR, M.D. Lond., F.R.C.P. With Illustrations. London: H. K. Lewis. 1898.

WE have great pleasure in very cordially recommending this book as a handy and reliable manual for the study of diseases of the nervous system. It has been written by an observer who is well known as an original worker at the subjects on which he has written, and the volume is remarkable for the conciseness and lucidity of its style throughout. The chapters on General Anatomy and on Case-Taking are especially good, and the descriptions of the various morbid conditions are clear and accurate. We wish the book every success.

The Diagnosis of the Nature of Organic Brain Disease. By SIR WM. R. GOWERS, M.D., F.R.C.P., F.R.S. Vol. I. London: Sir I. Pitman & Sons, Limited. 1897.

THE Society of Medical Phonographers, which originated a few years ago, has a vigorous vitality. In addition to publishing a monthly journal, *The Phonographic Record of Clinical Teaching and Medical Science*, the Society has aspirations towards founding a library of medical works printed in shorthand. Sir Wm. Gowers, the author of the present volume, is President of the Society, and an enthusiastic shorthand writer.

We heartily commend this work to those of our readers who write shorthand (Pitman's system). It is beautifully written in easy "corresponding" style.

We understand this volume is the first of a series from Sir Wm. Gowers. We look forward with pleasure to a perusal of the others.

Sickroom Cookery and Hospital Diet, with Special Recipes for Convalescent and Diabetic Patients. By MAUDE EARLE. With Notes on the Feeding of Infants, by FRANK C. MADDEN, F.R.C.S. London: Spottiswoode & Co. 1897.

WRITTEN by a staff teacher of the National Training School of Cookery in London, aided by the superintendent of Great Ormond Street Hospital for Sick Children, this book is sure to be of use to all engaged in preparing food for the sick. The recipes constitute the chief value of the book—they are very numerous, and the directions are given in plain, simple language. We recommend the book.

Introduction to Chemical Methods of Clinical Diagnosis. By DR. H. TAPPEINER. Translated from the Sixth German Edition, with an Appendix on Micro-Biological Methods of Diagnosis, by EDMOND J. M'WEENEY, M.A., M.D. London: Longmans, Green & Co. 1898.

PROFESSOR M'WEENEY is to be congratulated upon his successful translation of Tappeiner's work, and also upon the very useful appendix from his own pen. We have looked through the book, and feel quite sure that it will prove of great service both in the ward and the laboratory.

The Year-Book of Treatment for 1898: a Critical Review for Practitioners of Medicine and Surgery. London: Cassell & Co., Limited.

THIS is the fourteenth annual issue of this excellent handbook, and in all respects it seems to come up to the standard of previous years. The attempt to put before the busy physician

a readable digest of all the important advances made in therapeutics during the past year appears to have been highly successful.

The contributors, who number twenty-six in all, are men well known in special departments; among these the names of Dr. G. A. Gibson, lecturer in the Edinburgh School of Medicine, and Dr. Herbert P. Hawkins, physician to St. Thomas's Hospital, London, appear for the first time. The former has dealt with the section pertaining to the treatment of diseases of the heart and circulation; the latter with diseases of the stomach, intestines, and liver. We are sure that this issue will meet with the same approval as those of former years.

Edinburgh Hospital Reports. Edited by G. A. GIBSON, M.D., D.Sc.; C. W. CATHCART, M.A., M.B.; JOHN THOMSON, M.D.; D. BERRY HART, M.D. Vol. V. Edinburgh and London: Young J. Pentland. 1898.

THIS fifth volume of the *Edinburgh Hospital Reports*, in its scope and in the nature and merit of its articles, resembles very closely its four predecessors. It differs from them, however, in regard to bulk, for the present issue contains but four hundred pages in place of six hundred pages in previous years. We notice, also, that eighteen months have elapsed since the publication of the fourth volume. Surely this does not mean a falling off in interest of the Edinburgh medical school for its annual "reports?"

Be this as it may, we have here before us a collection of most interesting articles, and of these none are more so than that by Dr. Bramwell on "Abscess of the Brain," and than the one on "Cerebellar Disease" by Sir Grainger Stewart and Dr. G. A. Gibson. The latter is specially good, for along with its record of five cases, it gives as clear and complete an account of the signs and symptoms of disorders of the cerebellum as can be found anywhere.

The "Case of Gall-stones in a New-born Infant," reported by Dr. John Thomson, is also a valuable contribution to medical literature. But a fuller description of the histological appearances in the liver would have added to it value—*e.g.*, in respect to blocking of the capillary bile-ducts, as showing an irritating and viscid condition of the bile.

Dr. Greig's paper on "Unilateral Hypertrophy," with its table of published cases, must be read by those interested in

the subject. His theory as to the causation of the conditions he describes is also a welcome addition to a somewhat obscure subject.

Dr. Fleming has written "Notes on Peripheral Neuritis." His observations as to recovery of the ganglion cell after section of its nerve fibre is of interest in view of the fact that Dr. Ballet found complete atrophy in the cell after such section of its nerve. We must likewise mention an excellent article on the "Histology and Pathology of the Neuroglia," by Dr. W. F. Robertson.

Dr. Christian Simpson has a paper on "Intravascular Coagulation," which contains many useful observations. But is it the case that the uric acid in the blood is derived from the general tissue waste? Is it not now held that the uric acid found in the blood comes from the destruction of white blood corpuscles?

There are many other papers to which we might refer if space would permit, but the foregoing must suffice.

The volume, like the four previous ones, is well printed, well illustrated, well bound; and it cannot but prove, in every respect, a most useful addition to the medical literature of our country.

Saint Thomas's Hospital Reports. New Series. Vol. XXV.
Edited by DR. HECTOR C. MACKENZIE and MR. G. H. MAKINS.
London: J. & A. Churchill. 1897.

THE papers in the present issue call for no special comment. It may be noticed, however, that an "X-Ray" department has been added to the Hospital, a note on the establishment of which has been contributed by A. Barry Blacker, M.D.

Index-Catalogue of the Library of the Surgeon-General's Office, United States Army. Authors and Subjects. Second Series. Vol. II: B—Bywater. Washington, 1897.

WE have much pleasure in noticing the continuation of this important work, which keeps up the reputation of the first series. This volume is issued by D. L. Huntington, Deputy Surgeon-General and Lieutenant-Colonel, U.S. Army.

It has often been noticed that the subject-catalogue of a medical library undergoes remarkable changes, within even a

limited number of years, as regards the subjects which practically drop out, and more particularly as regards the subjects which are taken up in the course of time. The present volume covers the letter B, and it is interesting to compare some entries in this volume (1897) with the same letter of the first series in the volumes issued in 1880 and 1881. "Bacteria" then occupied two pages; now, with allied entries of "Bacteriology" and "Bacterio-therapy," we have no less than thirty-two pages of titles of books and papers! "Brain-Surgery," which did not exist as entry in 1881, has now ten pages of titles under it. Under "Blood," we have also some notable changes, particularly "Blood: Spectroscopy of, Semeiology of, Specific Gravity of," appear for the first time as headings; and "Serum of," appearing for the first time, occupies two pages for its entries.

Such a comparison shows the changes occurring in medical literature in sixteen or seventeen years.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

MATERIA MEDICA AND THERAPEUTICS.

By R. BARCLAY NESS, M.A., M.B., C.M.

Acetate of Thallium in the Treatment of the Night Sweats of Phthisis.—The toxic and physiological properties of the salts of thallium have already been the subject of investigation, and in 1884 Pozzi and Courtade proposed that they should be used in the treatment of syphilis. Lately M. Combe male (of Lille) made a communication to the Academy of Medicine with regard to the efficacy of acetate of thallium as an anhidrotic. He found it of chief service in checking the profuse perspirations of phthisical patients, although he found it also of some advantage in other cases not of a tubercular character.

It was administered in the form of pilules, each containing 10 centigrammes, and this was usually the dose for one day; very rarely were 20 centigrammes given. It was found expedient never to prescribe it more than four days in succession, because the effects were very persistent, sometimes continuing as long as from eight to ten days. The drug should be administered about an hour before the time perspiration usually occurs.

Its administration was never accompanied by any toxic symptoms, a fact worthy of note when we consider the poisonous character of the metal, and how it has been shown experimentally to act as a paralyser of muscle. It should, however, be noted that in three cases a loss of hair occurred, which became complete in two to eight days. These patients received from 80 centigrammes to 110 centigrammes during the course of treatment; but in the

tubercular patients who were under the same conditions, and whose perspirations were arrested with one or two consecutive doses, no such terrible result followed. It would seem to follow only the too frequent administration of the drug, or its prolonged employment. The alopecia could not be explained by the presence of the metal in the hair; this was collected in one case, and the metal tested for, but with negative results.—(*Gazette des Hôpitaux*, 24th February, 1898.)

The Value of Errhines as Expectorants. By Sir Dyce Duckworth, M.D.—The benefit sometimes derivable from sneezing in cases of suffocative bronchitis is not sufficiently appreciated in medical practice. When the bronchia are encumbered with abundant secretion from their surfaces, and when, owing to associated pulmonary emphysema, or defective muscular expiratory power generally, cough is little effectual in promoting adequate expectoration, sneezing is often a powerful aid to the latter process. This may be readily induced by ordinary snuff. It should be fresh and as pungent as possible. Failing this, recourse may be had to a snuff composed of one part of veratria and twenty parts of starch, lycopodium, or liquorice powder. This is usually unailing to provoke effective sneezing and cough with abundant expectoration. I have found marked relief thus afforded, and the powder may be used two or three times daily. Other methods of treatment must be applied, especially the employment internally of ammonium carbonate, senega, and nux vomica, all of which come under the class of what the late Professor Easton, of Glasgow, termed pneumo-musculo-excitants. Terebene is also of good service in such cases. But we have few better agents for rousing the respiratory centre in the medulla oblongata, reflexly through the nasal branches of the fifth nerve, than errhines, and their value has, I think, been too much forgotten in recent practice.—(*The Practitioner*, March, 1898.)

The Treatment of Gonorrhœa by Protargol. By J. Ernest Lane, F.R.C.S.—For many years past it has been recognised that nitrate of silver solutions were more efficient than any other substance in bringing about the destruction of the gonococcus, but owing to their irritating properties it has not been found expedient to use them except as topical applications to limited portions of the urethra, or in such a dilute form as to minimise their action. Experiments in various directions have been tried with a view of producing some compound which, whilst equally destructive to the gonococcus, would yet prove non-irritating to the sensitive mucous membrane of the urethra. Amongst the preparations hitherto brought forward which it was thought would fulfil these indications have been argentamin and argonin, but both of these have failed to produce the satisfactory results which had been expected of them.

Recently, however, a silver preparation, possessing marked antagonistic properties to the gonococcus, but being at the same time innocuous to the urethra, has been introduced, and has given the most satisfactory results in the hands of so eminent an authority as Professor Neisser of Breslau (*Centrallbl. f. Dermatol.*, October, 1897).

Protargol is a light yellow powder, which differs from argonin in that it is freely and easily soluble in water up to 50 per cent, forming a perfectly clear light brown solution; the amount of silver in protargol is 8·3 per cent, whereas in argonin it is 4·1 per cent, and in argentamin only 2·0 per cent. The solutions of protargol cannot be precipitated by alkalies, sulphur alkalies, albumen, or common salt, nor are they decomposed by diluted acids. Owing to its strong combination with the silver, it does not cause any irritation or pain, in spite of the high proportion of silver contained, notwithstanding that it possesses high properties as regards the destruction of bacteria. Its non-irritating properties recommended it strongly to Neisser and others who are opposed to the expectant method of treatment, but who advise that every attack of gonorrhœa should be treated by antibacterial injections as soon as possible after infection has taken place. Protargol renders possible a further

modification in the treatment of gonorrhœa, which seems to be most effective—viz., that the solution can be retained in the urethra for a considerable period of time without fear of complications; it is certainly better to allow the injection to remain in the urethra for a space of time varying from five to thirty minutes, and so to save the patient from the frequent repetition of the process. If gonococci are found to be present in a discharge the use of protargol should be commenced at once, and the injections should be used three times a day. At two of these applications the fluid should be retained for five minutes, while at the third the time may be prolonged to thirty minutes. After a few days one injection of protargol daily will suffice, while at the other two occasions some astringent may be substituted. As the treatment is painless, it can be continued for three or four weeks if necessary, though the disease seldom resists this treatment for so long a period. The strength of the solution should at first be $\frac{1}{2}$ per cent, but it may soon be increased to $\frac{1}{4}$, and ultimately to 1 per cent; and excellent results have been obtained in cases of urethritis in women by solutions of from 5 to 10 per cent. Finally, Neisser states his opinion that protargol is the best, the safest, and the quickest remedy he has yet employed in the treatment of gonorrhœa.—(*The Practitioner*, March, 1898.)

Calomel as a Curative Agent in Diphtheria. By Leonard D. Judd, M.D. (*The Annals of Hygiene and of Medicine*, vol. xii, No. 11).—In his paper read before the American Climatological Association the author states that he has met with excellent results in the use of this form of mercury in the treatment of diphtheria. He insists that it should be given in large and frequently repeated doses.

To a child eighteen months old he gave 10 grains of calomel as an initial dose, and 5 grains every hour after until eight doses were given, when free characteristic evacuations occurred. He does not state how long the child had been suffering with the disease, but says that she had grown steadily worse under the ordinary treatment, and before the use of calomel was commenced was in nearly moribund condition. She began to improve, however, after the fourth dose, making a splendid recovery without the slightest ill effects following.

In another case of a woman, 55 years of age, who was inoculated with diphtheria by being scratched on the finger by a child having a malignant form of the disease, 20 grains were given the first dose, followed by 10 grains every hour (giving in all 360 grains), when copious dejections occurred. Recovery in this case was also rapid.

His method is to give these large doses until there is secured from the bowels a green, copious, frothy discharge resembling "frog-spittle." As a means of diagnosing diphtheria from other throat affections this treatment has some value, as in true diphtheria, he says, calomel is slow to act on the bowels, and the more severe the attack the larger the doses required to secure this effect. He also recommends in malignant cases local applications of an aqueous solution of calomel, but as a rule has not found it necessary to use a gargle or spray, though in ordinary cases he frequently uses diluted peroxide of hydrogen in this manner, and later a solution of chlorate of potash, iron, and glycerine locally, and the same internally during convalescence.—(*International Medical Magazine*, January, 1898.)

"Euprophen," a Substitute for Iodoform.—This substance manufactured by Friedr. Bayer & Co., Ellersfeld, is an organic compound containing 27 $\frac{1}{2}$ per cent of iodine, and chemically known as iodide of isobutyl orthocresol. It exists in the form of a fine yellowish powder, having a slight but not unpleasant odour. While it is insoluble in water and glycerine, it is freely soluble in ether, chloroform, alcohol, as well as in fixed and volatile oils.

In a dry atmosphere at the ordinary temperature it remains permanent, but in contact with moisture iodine is gradually liberated. This liberation of iodine is still greater in the presence of an alkali, and its antiseptic properties,

when applied to a wound, probably depend on this liberation of the iodine. It may be used in the form of the powder, pure or mixed with boric acid or borax, or in the form of an ointment made with olive oil, vaseline, and lanoline, in the strength of 5 to 15 per cent.

This substance has been now used successfully for some years in surgery and in certain syphilitic conditions, and Fournier has not long ago emphasized its usefulness in the latter conditions (*Journal des Mal. Cut. et Syph.*, April, 1897). He advocates its use on the ground that it is easily handled, and, unlike iodoform, is non-toxic and has no unpleasant odour.

Hydrochloric Acid in Sciatica.—According to an article in the *Semaine Médicale*, a patient discovered for himself a successful treatment for sciatica, a disease from which he had suffered for several years. He had been under treatment in an Algerian hospital by means of hypodermic injections of salt and water, but without much success. After he had left he bethought him that perhaps the salt was not strong enough, and that a stronger preparation of salt might be more successful. He therefore procured some "spirit of salt" (hydrochloric acid) and painted it on the skin, getting rid of his long-standing trouble in a few days. Having occasion shortly afterwards to attend the hospital for some other affection, he confided to Dr. Bourlier, professor of therapeutics, how he had managed to get rid of his sciatica. This gentleman thought the plan worthy of trial, and employed it in several cases with invariable success. He then told his son, Dr. Maurice Bourlier, who was house physician, and he treated a number of cases with great satisfaction to himself and to his patients. A thesis has recently been published on the subject by Dr. C. Gennatas of Montpellier, on the basis of a dozen cases of neuralgia of the sciatic nerve, all of which were completely relieved by this means. The procedure is simple enough. Half an ounce of strong hydrochloric acid is put in a small cup, and a brush is dipped in it and applied over the painful part of the nerve, three or four coats being painted on. The limb is then enveloped in a cotton-wool dressing. Of course the application causes a somewhat severe smarting sensation, but this is quite bearable. A few minutes afterwards the skin becomes reddened and hot, and sometimes bullæ are formed which fill with fluid. These, even if they occur, disappear in two or three days. Usually the patient feels better even after a single sitting. The application can be repeated in from twenty-four to forty-eight hours, but not again for several days for fear of producing sloughs. Of course, too, where there are bullæ, they must be avoided in subsequent applications. No serious inconvenience is caused by the hydrochloric acid, such as was experienced when a similar procedure was attempted some years ago by Dr. Legroux with strong sulphuric acid, which was found to be liable to cause extensive sloughing of the skin. The twelve patients referred to were all reported as cured in from three to five sittings, extending over from a week to twenty-five days.—(*The Journal of the American Medical Association*, 8th January, 1898.)

DISEASES OF THE EAR.

By DR. WALKER DOWNIE.

The Artificial Membrana Tympani. By Arthur Cheatele,—In this paper, which, by the way, is entirely devoid of originality, the use of cotton-wool in the form of a wick (a form long employed by aurists) is specially recommended. A thin layer of antiseptic cotton-wool is soaked in a 1 to 60 watery solution of carbolic acid, with some glycerine added to prevent drying of the wick when *in situ*, and this evenly rolled up to form a fairly firm wick long enough to reach from just within the cartilaginous meatus up to the

middle ear. It should not be so thick as to completely fill the meatus. This certainly helps hearing in many cases where the tympanic membrane is in part or wholly destroyed. The author recommends the avoidance of artificial drums having a solid handle on account of the risk of injury to the middle ear, but an extended experience of this type of drum, which, however, must be carefully made and adjusted, prevents us from agreeing with his wholesale condemnation of them.—(*The Laryngoscope*, March, 1898.)

Otomyasthenia--Muscle-deafness. By Thos. F. Rumbold, St. Louis.—By the term otomyasthenia the writer means "ear-muscle debility." The functions of the middle ear muscles, he holds, are to select and amplify such sounds as the listener desires to hear most distinctly, that is, they are muscles of accommodation analogous to those of the eye.

The otomyasthenic may hear ordinary conversation when specially directed to him, but when in a company he is unable to take part in a general conversation, and will then complain of the mumbling way in which those around him talk. When his surroundings are quiet he can hear fairly well—in a quiet room no one would consider him very deaf; but when he desires to hear certain selected sounds, such as the words of one of the company in a room full of noisy people, his ears are unable to select and amplify the sounds he desires to hear, and his disability is then very evident.—(*The Laryngoscope*, January, 1898.)

Observations made in the Caisson of the New East River Bridge as to the Effects of Compressed Air upon the Human Ear. By J. C. Lester and Vincent Gomez.—These observations were made on eight individuals (five physicians, two engineers, and one foreman), in age varying from 20 to 45. The observations are prefaced by an interesting description of the caisson, and of the sensations experienced by the writers on entering the "lock" and while passing from that into the caisson proper, the phenomena noted during their stay in the caisson and after their exit. These observations are followed by details of the conditions of both ears in each individual, as tested by examination prior to entering and while in the caisson under a pressure of two atmospheres.

To fully appreciate the various changes reference must be made to the figures in the paper, but the conclusions may, in a general way, be given thus:—That the compressed air offers sufficient resistance to prevent whistling, especially the high notes; that the hearing-distance for speech is markedly decreased; that both aërial and bone conduction of the tuning-fork are diminished, and bone-conduction more so than aërial; and these are reduced directly in proportion to the atmospheric pressure.

Pressure of half an atmosphere is sufficient to cause depression of the drum-membrane. While in the "lock" before entering the caisson, the drum-membrane is apt to be ruptured unless Valsalva's experiment is frequently performed, and a pressure of two atmospheres may cause displacement of the ossicular chain and persistent tinnitus.

Persons suffering from coryza, chronic middle ear disease, and with labyrinthine affections should avoid entering a caisson.—(*Archives of Otolaryngology*, February, 1898.)

THE *Archives of Otolaryngology*, which for years has appeared quarterly, will in future be issued in bi-monthly parts.

In addition to the foregoing paper there are other three original communications to this first bi-monthly part, viz.—

1. "A Case of Internal Ear-deafness following Mumps, treated with Pilocarpine," by F. W. Jollye. The child on recovering from mumps was seized with pain over right side of head and giddiness on sitting up, and on testing it was found that she was totally deaf in right ear. No middle ear mischief could be detected. Many drugs were employed, and latterly pilocarpine injections, and hearing slowly improved.

2. "A Case of Bezold Mastoiditis with Extension to the Posterior Part of the Neck," by Dr. J. Guthman.

3. "A Contribution to the Symptomatology and Treatment of Pyæmic Sinus Thrombosis, based upon Three Successfully Operated Cases," by Fred. Whiting.

DISEASES OF THE EYE.

By FREELAND FERGUS, M.D.

Case of Traumatic Paralysis of the Abducens.—In Knapp's *Archiv* for January, Dr. Meyers mentions a curious case of traumatic paralysis of the abducens. Two children were running in opposite directions and came in violent contact with each other. The right temple of the one was brought into violent contact with the forehead of the other. After the accident the child who had received the blow on the temple saw everything double. The diplopia very soon passed off again, but only to return, and was present for nearly a month. On examination it was found that there was complete paralysis of the right abducens, and that there was absolutely no trouble with any other nerve. Dr. Meyers thinks that the case was one of direct injury to the nerve by concussion or by contusion at the point where it enters the notch under the posterior clinoid process. This, he thinks, may have been produced by the blow on the temple jamming the tip of the petrous portion of the temporal bone against the nerve.

Mechanism of the Movements of the Eye.—A paper by Carl Weiland (Knapp's *Archiv*, 1898) starts with Volkmann's theory that, instead of there being only three axes of rotation, there are six in all, one for each muscle. The following are the movements caused by each muscle:—

Rect. ext.	moves eyeball out, up ;	rotates upper cornea inwards.
Rect. int.	in, up ;	outwards.
Rect. super.	up, in ;	inwards.
Rect. infer.	down, in ;	outwards.
Obl. super.	down, out ;	inwards.
Obl. infer.	up, in ;	outwards.

Weiland takes the case of a simple abduction, and shows that it cannot be brought about by two muscles only.

Retinitis Circinata.—This is a very rare disease, and a supposed case of it has just been described by Dr. Weltert. The leading authority on the subject is Professor Fudis. Judging from the description given, the case in point, so far as ophthalmoscopic appearances are concerned, might well have been mistaken for retinitis albuminurica:—"Papilla somewhat hyperæmic, slightly swollen, the larger vessels distended with blood, the lower half of the retina slightly cedematous. The whole macular region, and the adjacent parts of the retina, extending tolerably far toward the periphery, show pathological changes. In the macula there is a peculiar radiating, irregularly oval figure, composed of partly intensely white, partly whitish-yellow, patches, with intervening larger and smaller aggregations of pigment." The case developed both a central scotoma and a peripheral contraction of the field of vision. The urine was tested frequently, but no trace of albumen was found.

Iron Bodies removed with Large Magnet.—Dr. Barhan has recently had some excellent results in the removal of foreign bodies from the eye by means of the powerful magnet devised by Professor Haab. Not only is the instrument of great service for this purpose, but it is of use in the

detection of such bodies, and renders the application of *asmus sideroscope* almost superfluous. The magnet is a very powerful one, the current used being 100 volts, and in Dr. Barkan's cases it drew out most of the foreign bodies without any enlarging of the wound. From the description given, it seems to us quite obvious that this new instrument is much superior to the older form devised by Hirschberg, and it seems to do its work much better.

The Nutrition of the Lens.—Ulry (Landolt's *Archiv*) starts with a review of the work already done. This he epitomises in these words:—"The eye is traversed by a lymphatic current by means of which the contained media receive the material necessary for their nutrition." The generally accepted opinion is that the secretion of the liquid takes place at the ciliary processes. Parras, on the other hand, holds that the secretion takes place at the ectodermic surface of the retina, and that the entire retina takes a part in this secretion. Ulry has experimented by injecting colouring substances (1) into the circulation; (2) into the aqueous and vitreous humours; (3) into the cellular sub-conjunctival tissue. Lastly, he has repeated the experiments made by Parras with naphthaline, to determine the part taken by the retina in the nutrition of the vitreous humour and of the lens. All the nutrition comes by the blood, which rapidly and continuously renews the material. If any colouring matter is introduced rapidly, Ulry thinks that it must appear in the eyeball first at the place where the secretion of the liquids takes place. The liquid selected was fluorescence injected into the blood. His results quite confirmed previous experiments. The green colour first appeared at the ciliary body, and rapidly spread to the aqueous and vitreous humours. The first appearance of the colour was from five to seven minutes after the injection. The effects did not entirely pass off till ten hours. Thus Ulry again showed that the chief channel of nutrition is through the ciliary region.

As to the paths of excretion, the author found that carmine introduced into the anterior chamber passed at the irido-corneal angle into the supra-choroid and into the sclerotic, and ultimately found its way into the episcleral tissue. Finely powdered Chinese ink passed through the trabeculae at the base of the iris, surrounded the canal of Schlemm without penetrating it, and then passed into the supra-choroid in the form of streaks which seemed to be continuous with the trabeculae of the iris. This rather confirms the view that the canal of Schlemm is not a lymphatic space, but is a venous sinus analogous to the cavernous sinus of the dura mater. One portion of the aqueous humour thus finds its way by *filtration* into Schlemm's canal; another passes *directly* into the lymphatics of the supra-choroid. On injecting four drops of water containing Chinese ink into the centre of the vitreous, the author found that it passed backwards through the papilla into the optic nerve. Various experiments made by sub-conjunctival injection have led to the belief in a current passing backwards also through the optic papilla and along the lymphatic spaces of the optic sheath.

Ulry has repeated the experimental production of cataract by the administration of naphthalin. The first change noticed was great loss in weight, then retinitis, and, lastly, the formation of cataract. There never appeared any haze of the vitreous body. Coincident with these changes in the eye are found, plainly in patches, degeneration of the hepatic cells, renal congestion, with epithelial nephritis. Thus the injection of naphthalin has produced loss of flesh, marked changes in the eye, ending in cataract, and considerable alterations in the kidneys and liver. Does it, however, follow that because there is cataract subsequently to the retinitis, that they are related to each other as cause and effect? Our author thinks not, but considers both as part of the same intoxication. He founds this opinion on the fact that if, after a retinitis is thoroughly and permanently established by doses of naphthalin, the administration of the drug be stopped, that then no formation of cataract takes place. Further, cataract does not necessarily ensue on embolism of the central artery, although there is atrophy of the retina.

Books, Pamphlets, &c., Received.

- Yellow Fever in the West Indies, by Izett Anderson, M.D. Edin. London: H. K. Lewis. 1898. (3s. 6d.)
- Inflammation of the Bladder and Urinary Fever, by C. Mansell Moullin, M.D. Oxon., F.R.C.S. London: H. K. Lewis. 1898. (5s.)
- Life of Vincent Priessnitz, Founder of Hydropathy, by Richard Metcalfe. Published by Metcalfe's London Hydro., Limited. 1898. (3s. 6d. net.)
- The South African Climate, more particularly in relation to the Treatment of Diseases of the Chest, by William C. Scholtz, M.D. Edin. With Eleven Illustrations. London: Cassell & Co., Limited. 1897. (5s.)
- Middlesex Hospital Reports for 1896. London: H. K. Lewis. 1897. (Price 2s. 6d.)
- Diabetes Mellitus and its Treatment, by R. T. Williamson, M.D. Lond. With Eighteen Illustrations. Edinburgh and London: Young J. Pentland. 1898.
- Doctor and Patient—Hints to Both, by Dr. Robert Gersuny. Translated by A. S. Levetus. With Preface by D. J. Leech, M.D. Bristol: John Wright & Co. 1898. (2s.)
- A Clinical Text-Book of Surgical Diagnosis and Treatment for Practitioners and Students of Surgery and Medicine, by J. W. Macdonald, M.D. With Three Hundred and Twenty-eight Illustrations. London: The Rebman Publishing Company. 1898. (28s.)
- The Diagnosis of Disease, by J. Porter Parkinson, M.D. London: Baillière, Tindall & Cox. 1898. (4s.)
- Surgical Technics in Hospital Practice, by K. W. Monsarrat, M.B. Bristol: John Wright & Co. 1898. (3s.)
- Report of the City of Glasgow Fever and Small-Pox Hospitals for the Year ending 31st May, 1897, by Alex. Johnston, M.D., D.P.H. Glasgow: Printed by Robert Anderson. 1897.
- Praxis der Harnanalyse, von Dr. Lassarcohn. Zweite Auflage. Hamburg: Leopold Voss. 1898. (1s. 3d.)
- A Manual of General Pathology for Students and Practitioners, by Walter Sydney Lazarus-Barlow, M.D. London: J. & A. Churchill. 1898. (21s.)
- Clinical Lectures on Diseases of the Heart and Aorta, by George William Balfour, M.D., LL.D. Third Edition. London: Adam and Charles Black. 1898. (12s. 6d.)
- Ringworm in the light of Recent Research (Pathology, Treatment, Prophylaxis), by Malcolm Morris. With Twenty-two Microphotographs and One Coloured Plate. London: Cassell & Co., Limited. 1898.

**GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR
THE FOUR WEEKS ENDING 23RD APRIL, 1898.**

	WEEK ENDING			
	April 2.	April 9.	April 16.	April 23.
Mean temperature, . . .	40·3°	47·5°	48·7°	49·6°
Mean range of temperature between day and night, .	15·4°	15·3°	15·3°	15·8°
Number of days on which rain fell,	5	5	5	2
Amount of rainfall, . . ins.	0·42	0·54	0·34	0·15
Deaths registered, . . .	363	367	306	315
Death-rates,	26·1	26·3	22·0	22·6
Zymotic death-rates, . .	3·8	5·0	2·9	4·0
Pulmonary death-rates, .	9·0	8·3	6·6	7·9
DEATHS—				
Under 1 year,	88	86	70	69
60 years and upwards, .	75	74	49	47
DEATHS FROM—				
Small-pox, . . . . .	...	...	...	...
Measles,	20	21	13	22
Scarlet fever,	8	3	7	3
Diphtheria,	2	2	...	3
Whooping-cough, . . .	14	31	13	16
Fever,	4	2	1	3
Diarrhoea,	5	11	7	9
Croup and laryngitis, .	2	3	2	...
Bronchitis, pneumonia, and pleurisy,	99	82	71	75
CASES REPORTED—				
Small-pox, . . . . .	...	...	...	...
Diphtheria and membranous croup,	10	1	6	5
Erysipelas,	20	20	25	17
Scarlet fever,	66	47	52	44
Typhus fever, . . . . .	...	...	...	...
Enteric fever,	12	8	15	10
Continued fever,
Puerperal fever, . . .	1	...	2	2
Measles,*	449	348	403	488

* Measles is not notifiable.

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ORIGINAL ARTICLES.

EXTRA-UTERINE PREGNANCY.¹

By J. K. KELLY, M.D.,

Physician for Diseases of Women, Glasgow Royal Infirmary ;
Lecturer on Gynæcology, St. Mungo's College.

It is a noteworthy fact that though many books have been written and a great deal of discussion has been carried on about extra-uterine pregnancy, it is still generally considered a rare affection—an anomaly deserving mention as a pathological curiosity and an interesting freak of nature, but not likely to be met with in ordinary practice, and hardly deserving attention as an ailment affecting humanity.

The explanation of this attitude of the medical profession towards what is not an uncommon malady is no doubt to be found in the fact that, until quite recently, attention was given only to cases where a foetus was to be seen and felt in the extra-uterine ovum; while in the great majority of instances, when a pregnancy is extra-uterine, it is interrupted at such an early period that the foetus is incapable of resisting the destructive forces to which it is exposed during and after its death, and accordingly the naked eye cannot detect that it

¹ Read at a meeting of the Glasgow Pathological and Clinical Society held on 11th April, 1898.

has ever existed. Such cases were formerly misinterpreted, and only the much rarer cases were recognised in which the embryo had lived till some part of its osseous system was formed. Hence it was, no doubt, that extra-uterine pregnancy was hardly recognised as a disease to be reckoned with in the ordinary course of practice until the microscope began to be used in pathological research.

Far from being rare, however, extra-uterine pregnancy is of frequent occurrence, and in this paper I wish to emphasise this frequency.

But before I come to that I propose to discuss briefly the symptoms of the disease. First of all, however, it has to be stated that all the cases of extra-uterine pregnancy whose origin has been satisfactorily determined have been cases of tubal origin. In the specimens shown by Dr. Teacher from my own cases the site is always in the tube. That is a point, however, I do not stop to discuss. I merely state that, in explaining the symptoms which we are to consider, I start with the hypothesis that the pregnancy is primarily in the tube. This then being so, it may be said that extra-uterine pregnancy gives rise to no symptoms before it separates from or ruptures the tube. Previous to this there may or may not be present symptoms of early pregnancy, just as such symptoms may or may not be present in intra-uterine pregnancy; but if they are present, there is nothing in them characteristic of tubal pregnancy. This does not, of course, imply that a diagnosis of extra-uterine pregnancy is impossible before rupture takes place. Some accidental circumstance giving occasion for a pelvic examination may reveal the condition before any symptoms arise, and there are several instances recorded in which this has actually happened.

The symptoms that indicate extra-uterine pregnancy belong not so much to the pregnancy itself as to an accident occurring in its course—an abortion, in fact—a rupture of the tube enclosing the ovum, or a separation of the ovum from the tube. And these symptoms should be known as perfectly characteristic, so that the diagnosis of extra-uterine pregnancy, instead of being as is often supposed an obscure and difficult matter, should be regarded as among the easiest tasks the physician has to undertake. As an illustration I may read notes of one case:—

Mrs. F., æt. 38, admitted 3rd February, 1898, has had seven children, the last fifteen months ago. Patient is exceedingly anæmic; has an anxious, distressed appearance; lies most comfortably on right side, with knees drawn up. Pulse

feeble, 120; cardiac sounds accentuated. Four weeks ago, on Monday, 3rd January, she had a hard day's work, and about 8 P.M., when sitting by the fire, she was suddenly seized with severe bearing-down pain in the hypogastrium. The pain resembled labour pains, and was so severe that she turned faint and cold, and vomited. She was lifted into bed, and hot applications were applied to the abdomen. Severe attacks recurred on the three following nights, not quite so bad as the first attack, but causing faintness and vomiting each time. It has recurred several times since, and on 31st January, three days before admission, she had the worst attack of all. She stopped nursing her last child in October last, but menstruation did not return until on 2nd January, the day before she was seized with the present illness, there was a profuse discharge, which was accompanied by more pain than usual, and lasted eleven days. Since then there has been no vaginal discharge. For the last few days she has had great difficulty in passing urine, and on admission the catheter had to be used. On examination the whole abdomen is enlarged and tender to pressure. The pain, however, is most marked below the umbilicus. The lower abdomen is occupied by a tumour, which reaches to a finger's-breadth below the umbilicus in the middle line, but on the left side reaches slightly above the level of the umbilicus. The greatest bulging is at the level of the A.S. spine, slightly to left of the middle line. *Per vaginam*, cervix is high up, pressed forward against pubis by tumour filling Douglas' pouch, and having a doughy elastic feel. *Per rectum*, the lumen is found encroached upon by the same tumour.

In this case the history of amenorrhœa, the symptoms accompanying and following the sudden onset of the illness, and the physical signs, both abdominal and pelvic, left no doubt as to the nature of the case. To illustrate, however, the way in which the disease varies in its manifestations, let me read a few notes of another case:—

Mrs. P., æt. 36, admitted 27th February, 1897, has had six children, the last five years ago. There is a history of pelvic inflammation after the birth of the last child, and since then she has suffered from pelvic pain. Menstruation, however, was regular till during the last four months the discharge has been very scanty, but there has been nothing to indicate pregnancy. Three weeks ago she had a profuse vaginal hæmorrhage, preceded by pain, sickness, vomiting, and feeling of coldness. The pain continues, and there is still a slight discharge of blood. She is troubled

with rectal tenesmus and pain on defæcation. On examination, a rounded tumour, tender to pressure, is found in the hypogastrium, reaching to 1 inch above the level of the A.S. spine, situated chiefly to the left of the middle line, but extending across to the right side near the pubis. *Per vaginam*, the uterus is displaced forwards; measures 3 inches; not tender. Left side and posterior part of pelvis occupied by the tumour felt per abdomen. In this case, as in the former one, there was no doubt as to the nature of the disease, but the indications which may be regarded as confirmatory or subsidiary to the diagnosis were fewer. The characteristic symptoms were the same in both instances. These are three in number—a sudden attack of illness marked by signs of shock, a distension of the abdomen following upon this attack, and the formation of a tumour in Douglas' pouch. A woman is in perfect health. Suddenly she becomes faint and sick, and has to lie prostrate. The abdomen becomes distended and painful, and the posterior vaginal fornix is bulged down behind and below the cervix. There is no other disease that gives this combination of symptoms, and they may be regarded as pathognomonic of extra-uterine pregnancy. Additional indications are frequently present. The woman may have believed herself pregnant, may have had the ordinary symptoms of pregnancy, and may have missed one or two menstrual periods. At the time of onset of the illness, or shortly thereafter, a uterine discharge may set in, and in this discharge a decidual membrane may be found. As the result of the pressure of the tumour on the pelvis, difficulty may arise both in micturition and in defæcation. The uterus is enlarged and softened as in ordinary pregnancy, and the uterine arteries pulsate. All these symptoms may be present, but they are merely subsidiary details, filling up and making complete the picture of the disease, but not necessary to its distinctive characterisation. This complete characterisation is given by the combination of the three symptoms first mentioned, and until their importance is realised the others may be almost disregarded. The sudden shock is due to the rapid loss of blood consequent on the laceration of the placental vessels. The abnormal swelling is due to the collection of this blood in the abdomen, raising up the intestines so that they float on its surface or are completely bathed in it. The retro-uterine tumour is due to the blood gravitating to the lowest part of the peritoneal cavity.

We must, of course, be prepared for variations even in these three predominating symptoms. The loss of blood may be slight, and consequently the shock and subsequent tumour

formation less marked. In such cases there is frequently a recurrence of the attack, and the recurrence may present the characteristic phenomena in a more marked way than the first attack. There may even be several recurrences, as in the report I first read. The point I wish to bring out is that when a sudden illness occurs, marked by the symptoms which severe hæmorrhage always produces and by the formation of an abdominal swelling and a protrusion in Douglas' pouch, we ought at once to accept this illness as due to extra-uterine pregnancy. The diagnosis is essentially simple, and this is of immense importance to the practitioner of these days when medical science is loaded with a greater burden of detail than even in the days of mediæval scholasticism.

It is probable that there are many cases of extra-uterine pregnancy which never cause severe symptoms; in which the abortion takes place so early and with such slight hæmorrhage that, beyond pelvic pain, the woman has no complaint. This is illustrated by a case I operated on last year. This Mrs. H., æt. 30, was quite a mine of pathological interest in herself. Ten years ago she had an ovary removed. Nine years ago her endometrium was curetted. One year ago her right kidney was removed for tubercular disease, and now she had come into hospital complaining of pain on the left side of the pelvis, with dysmenorrhœa and menorrhagia, and expecting to have the other ovary removed. On admission, examination revealed a small tumour in the pelvis which was described as an enlarged and cystic left ovary presenting distinct lobules. During her stay in the ward this pelvic tumour enlarged slightly, and three weeks after admission it was removed. "The ovary was adherent all round, and contained several small hæmorrhagic cysts and, on its surface, a few rounded cysts with serous contents. The tube was somewhat dilated, adherent round the ovary, and filled at its outer end by an old blood-clot. The fimbriated end opened directly into the largest cyst of the ovary." The appearance of the tube at once suggested the idea of a tubal pregnancy, and this was confirmed by microscopic examination. But no suspicion of that condition had arisen previous to operation, and but for the operation no suspicion probably would ever have arisen. In general, however, the diagnosis is easy, and no one who bears in mind the main characters of the disease is likely to overlook it often. In practice I find that it is usually confused with one or other of four conditions. It is sometimes regarded as an abortion, sometimes as a peritonitis, sometimes as a pelvic abscess, sometimes as a retroversion of the uterus.

But such mistakes are easily rectified as soon as a full study of the case is made.

As to the frequency: between 1st October, 1896, and 31st March, 1898, a period of eighteen months, we have had under our care (in Ward 30) 300 patients suffering from pelvic disease. Of these 300, 16 were the subject of extra-uterine pregnancy, *i. e.*, 5·3 per cent, or 1 in about every 18 cases. In 11 of these 16 cases the diagnosis was confirmed by operation, and even if we exclude the 5 cases in which no operation was done, and in which, therefore, the material proof of the pregnancy was impossible, we have had 1 case of extra-uterine pregnancy in every 27 cases of pelvic disease. Does this mean that over the whole, taking cases as they come without any selection, we may expect to find extra-uterine pregnancy in about 4 per cent of the women who suffer from pelvic disease? We have, of course, no means of estimating the frequency of this abnormal gestation in former times when pelvic disease in women was a *terra incognita*. Nor do I know of any estimate even in late years. We have no grounds, however, for thinking that ectopic gestation is any more common now than in the past. Its apparently greater frequency is probably entirely due to its being formerly unrecognised. It has been well enough known since the early fifties (Nélaton, 1850) that hæmatocele was frequent in women, but the first speculations as to its cause hardly ever looked in the direction of extra-uterine pregnancy. It is a noteworthy instance of the influence of hypothesis on observation, that though cases were well enough known in which patients with an extra-uterine ovum had died from internal hæmorrhage, the ideas of extra-uterine pregnancy and of hæmatocele were not combined till more than thirty years had elapsed after pelvic hæmatocele had been clearly defined by Nélaton and others. Since then, however, indeed we may say within the last fifteen years, the point of view has undergone a complete change, and it is now legitimate to doubt whether such a disease as was called, and is still called, "simple hæmatocele" actually exists. It cannot, of course, be denied that it is possible for a hæmatocele to arise from a ruptured varicose vein in the broad ligament, or from rupture of a hæmorrhoidal vessel (as Simpson reports in one fatal case), or from some other vascular lesion in the pelvis, but it is remarkable that of late years no such case has been described, and the improbability of it ever occurring from the rupture of vessels in the pelvis is increased by the fact that it is never met with in ordinary pregnancy when those vessels are filled with blood to the most extraordinary degree. It may

be taken for granted that we can hardly ever go wrong if we consider a hæmatocele as indicating an extra-uterine pregnancy. The frequency of reports of pelvic hæmatocele since Nélaton's time may be taken, therefore, as some indication that extra-uterine pregnancy has always been a frequent affection of women.

Taking, then, as I do, pelvic hæmatocele as a result of extra-uterine pregnancy, the treatment of the latter must also be that of the former, and this, I think, has been the chief cause of indecision as to the proper course to be adopted. The treatment of hæmatocele previous to the recognition of its cause, and in spite of many illustrations of the danger attending it, had been gradually formulated into the instruction to wait for absorption.¹ Even in the *System of Gynecology*, edited by W. S. Playfair, 1896, which should represent the best and latest English thought on the subject, Sir Wm. Priestley says (p. 555), "The matter seems now to be settled absolutely in favour of non-interference in the extra-peritoneal form, and also in a large proportion of intra-peritoneal cases." And in the latest edition of Hart and Barbour's text-book, published in October of last year, expectant treatment is advised. "The patient is to be put at complete rest, with ice-bags to the abdomen. Ergotine should be injected into the the buttock. The ice-bag is to be kept on for several days, as this will limit the subsequent peritonitis. If the patient is collapsed, then stimulants and hypodermics of sulphuric ether and whisky must be freely used. A large mustard poultice over the abdomen is often serviceable, both as a blood derivative and in allaying vomiting." Now, even if we do not grant that the condition is always due to an extra-uterine pregnancy, we know that to the formation of a hæmatocele there goes a serious and even dangerous hæmorrhage. And supposing we had such a hæmorrhage from a vessel on the surface of the body—say a ruptured varicose vein of the leg, or a wounded radial or brachial artery—would we limit ourselves to follow the direction: keep at rest, put on ice-bags, give a hypodermic of ergotine, and apply a mustard poultice as a blood derivative? Every surgeon would regard such advice as ridiculous, but it is no less ridiculous when the vessel is out of sight in the cavity of the abdomen, and in order to reach it an incision has to be made through the abdominal wall. In opposition to this advice I would say that, except in very exceptional circumstances, it is the duty of the surgeon to operate at once so as to reach and control the source of the hæmorrhage. By

¹ Simpson mentions seven cases—four of them died.

operating you have the disease absolutely under control, and you can cure it as completely as you can cure a wounded artery. By refraining from operation you leave the case to haphazard, to uncertain, and possibly noxious influences. The danger of operation is to be weighed against the danger of recurrence of the internal hæmorrhage, of the occurrence of uterine hæmorrhage, of suppuration in the sac, and of decomposition of its contents apart from suppuration. Weighed against these dangers the danger of operation counts for very little. In many cases now abdominal section has been done when the patient was moribund, and has saved the life. The old idea of shock from opening the peritoneum is sufficiently negatived by such cases and by countless other cases of operation within the peritoneum as well as of accidents affecting the abdomen. It is not the shock that is dangerous in abdominal section. The danger lies in infection. We may say that if no infective material is present the danger of an incision of the peritoneum is as little as the danger of a similar incision anywhere. I consider, therefore, that it should be made a rule to perform abdominal section in cases of hæmatocele, but there are naturally exceptions to this rule. Aug. Martin (*Die Krankh. d. Eil.*, p. 389) says, "It is not to be denied that the formation of intra-peritoneal hæmatocele or extra-peritoneal hæmatoma admits of the possibility of recovery without operation. We must, therefore, recognise it as justifiable to do without operation when intra- or extra-peritoneal blood tumours have formed. My personal experience, however, leads me to require as the indispensable condition of an expectant attitude in hæmatocele that the patient remain under strict control, so that when the condition of the pulse or the general condition indicates a secondary hæmorrhage, or when the change of temperature and the local phenomena indicate a breaking down or suppuration of the blood mass, an operation can be performed without delay." It is evident that in Martin's opinion there are few cases in which an expectant attitude is justifiable, since there are few cases that can be kept continuously under the surgeon's control. But I would add to those he considers justifiably exempt from operation another set of cases in which the diagnosis is made some time after the formation of the hæmatocele, and in which when the diagnosis is made the hæmorrhage has ceased for some time, the process of absorption is evidently in progress, and the general symptoms are rapidly improving. Such cases, however, are exceptional, and hardly affect the rule of operation immediately on a diagnosis being made.

Of the 16 cases which I have used as the basis of this paper I operated on 11. In 3 of the cases I deliberately adopted the expectant attitude, and in the other 2 cases operation was refused. Of the 11 cases operated on 1 died of septic peritonitis, the others all made a rapid and complete recovery. Indeed, there is nothing more remarkable than the immediate relief given in these cases by the removal of the blood mass which is burdening the peritoneum and causing what is at times intolerable suffering, and by removal of the wounded tube, which is in itself a constant source of danger.

As illustrating the influence of a tube which has been disorganised by pregnancy even after the hæmatocele has been cleared away, I may take the first of these cases. On 26th October, 1896, I cleared out the hæmatocele through an incision in the posterior vaginal vault. This healed perfectly, and the patient, we thought, was well except for a swelling in the left tube. From the 2nd till the 10th November she had what was considered a rather copious menstruation. On 11th November she was allowed out of bed, but a free uterine discharge set in, and she had to take to bed again. This recurred on 13th and 14th November. On 17th November there was again a free hæmorrhage, and on the 18th the uterus was curetted. The hæmorrhage, however, persisted, and on 2nd December I removed the left tube, which contained the remains of the ovum. At once the hæmorrhage ceased, and in sixteen days the patient left hospital perfectly well. She has continued well since.

This case showed the necessity of removing not only the hæmatocele but the diseased tube as well. It illustrated the influence of a diseased tube upon the uterus, an influence with which we are so familiar in cases of pyosalpinx, and it also showed the inferiority of vaginal to abdominal section. The same lessons were taught by the next case that was admitted. Here again I cleared out the hæmatocele in the prescribed way *per vaginam*, and again the symptoms were unrelieved, but on this occasion the resort to abdominal section was too late, and the patient died of septic peritonitis. In spite of an old-standing pelvic disease and of a constitution weakened by syphilis and alcoholic poisoning, and the moral depravity indicated by these, I believe that had I at the very first performed abdominal section the patient would have been saved. In the 9 succeeding cases in which I have acted on this conviction the operation has been perfectly successful.

In three cases I deliberately adopted the expectant attitude. In the first of these the patient, after three weeks of great

suffering, had been much relieved for about a week before admission to the ward, and we decided to wait for absorption to take place. This decision we kept—wrongly, I now believe—in spite of an increase of the effusion about three weeks after admission. She was in hospital for two months, and then left only for domestic reasons. The effusion had almost entirely disappeared, but the tube on the right side remained enlarged, and the patient was by no means well. She is still an invalid after a year, and is to return to hospital for further treatment. In the other two cases treated expectantly, the effusion was evidently undergoing rapid absorption when the patients were admitted. In one of them the absorption seemed to be nearly complete when she left hospital about three weeks after admission. In the other—who was four weeks in hospital—the effusion was by no means completely absorbed and the local pain was still considerable when she left, and two months afterwards we heard that she was still an invalid.

I do not here discuss the treatment of extra-uterine pregnancy in its more advanced stages. In these it is rarely met with, and the discussion of the methods of treatment suitable for its various complications is mainly interesting only to specialists. Moreover, the cases which have served as the basis of this paper have all been cases in an early stage. In this stage it is frequently met with, and it is mainly to emphasise the importance of its recognition at this stage that I have written this paper. I would repeat that its diagnosis is easy and its treatment simple, and I am fain to believe that the time is not far distant when every practitioner will feel himself competent both to recognise and to treat at once by the proper method any patient affected with an extra-uterine pregnancy.

1. OF THOSE OPERATED UPON.

2. OF THOSE NOT OPERATED UPON.

Age.

31, 33, 20, 36, 30, 30, 23, 21
30, 23, 38.

33, 36, 21, 28, 38.

Interval since last child.

3½ years, 16 years, 0, 5 years,
0, 3 years, 0, 14 months,
2 years, 11 months, 19
months.

5 years, 9 years, 0, 8 years,
14 months.

1. OF THOSE OPERATED UPON.

2. OF THOSE NOT OPERATED UPON.

Interval since last menstruation.

1, 3 months, 7 weeks, 4 months, 4 weeks, 7 weeks, 6 weeks, 4 weeks, 9 weeks, 7 days, 18 days.	2 months, 2 months, 14 days, 6 weeks, 2 months (since lactation ceased).
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Side (tube) on which ovum was situated

On left side in 6 cases.	1 on right side in 3 cases.
On right side in 4 cases.	1 on left side in 2 cases.
Doubtful in 1 case.	

There was no vaginal discharge at all in	1 case.
Escape of membrane was noted in	4 cases.
Diagnosis of abortion was made in	4 "
Diagnosis of retroversion was made in	2 "
Diagnosis of inflammation of bowels (peritonitis)	
was made in	2 "
Diagnosis of pelvic abscess was made in	2 "

SHORT CLINICAL REPORTS OF CASES OF EXTRA-UTERINE PREGNANCY.

1. Mrs. M., æt. 31, admitted 16th October, 1896, iv-para, last child three and a quarter years ago. For last six weeks pain in right side and across abdomen, intermittent in character, accompanied by shiverings and sweatings. A week before admission tumour in right iliac region was discovered. On admission, in right lower abdomen a rounded, firm, immovable mass, reaching to middle line internally and to right iliac fossa externally; upper border on level of A.S. spine. *Per vaginam*, cervix low in vagina, almost fixed; posteriorly, whole pelvis occupied by a rounded elastic swelling presenting distinct fluctuation on the right side; on left side very tense and firm. Uterus pressed forward, fundus thrown towards right side, palpable about 1 inch above pubis; under surface not quite uniform. *Per rectum*, tumour is found to bulge in anterior rectal wall.

25th October.—Uterus curetted, posterior vaginal incision, hæmatocele cleared out.

2nd November.—Menstrual discharge began and continued till 10th. On 11th patient rose out of bed, and very free

uterine hæmorrhage occurred. This recurred on 13th and 14th, and hot intra-uterine douches were prescribed.

17th November.—Free hæmorrhage.

18th November.—Endometrium curetted and uterus packed with gauze. Hæmorrhage continued.

20th November.—Elongated cystic mass found in left side of pelvis. Hæmorrhage continued almost without intermission, and on 2nd December left hæmorrhagic tube was removed by abdominal section.

18th December.—Patient dismissed well.

2. Mrs. G., æt. 33, admitted 7th December, 1896. Had a still-born child sixteen years ago, after which she was confined to bed for six months. At Royal Infirmary Dispensary, in October, 1892, uterus was found fixed in adhesions, and the left appendages full and tender to pressure. In April, 1893, patient had a lupus-like ulceration over lower abdomen, of which the scars are still marked. Three weeks ago, after menstruation had been absent for three months, as she rose out of bed one morning to make breakfast, she sank to the floor with a severe pain in the lower abdomen. At the same time bleeding from vagina came on, which lasted three or four days, and during that time she was so faint that she could hardly move. Ten days ago the pain and bearing-down became so severe that her womb came down. A doctor was sent for, who did something that caused some bleeding, and then he introduced a pessary. This bleeding was very copious, and lasted for two days. She has had frequency and pain in micturition, and difficulty and pain in defæcation for the last three weeks. She thought herself pregnant owing to the amenorrhœa, but had none of the symptoms of pregnancy.

On admission were found tenderness, dull percussion, and feeling of tumour all over the hypogastric and iliac regions. *Per vaginam*, portio vaginalis close to vulva; posterior and lateral vaginal fornices bulged down, somewhat lower on right side than on left. In right fornix, also, greater tenderness. Uterus anteflexed, of normal length.

As patient was very exhausted on admission, it was resolved to treat her by rest and restoratives. For eleven days a gradual though only slight improvement seemed to take place, sedatives having to be constantly given for the abdominal pain.

18th December.—Could not take food.

19th December.—Severe vomiting set in.

20th December.—Hæmatocele was cleared out by posterior

vaginal incision, and packed with gauze. The gauze packing was changed regularly, and patient improved; but on 29th December hæmorrhage set in, apparently coming from hæmatocele cavity. This continued at intervals, and weakened patient rapidly.

2nd January.—Abdominal section. Sac containing foetus was found covered by adherent omentum and bowel, and removed. Hæmatocele cavity cleaned and drained towards vagina.

3rd January.—Patient died of septic peritonitis.

3. Mrs. W., æt. 20, nullipara, miscarriage at four and a half months in August, 1896, admitted 18th February, 1897. Three weeks ago, after seven weeks amenorrhœa, patient was suddenly seized with pain in hypogastrium, and discharge of clots from vagina, resembling but not in such quantity as at the abortion in August. This was accompanied by vomiting and faintness, but she only kept bed one day. Pains and discharge have continued since; but there have been no rigors, or headache, or sweating, only the day before admission she felt cold, and the hypogastric pain has been much more severe during the last week. Micturition is painful, and there is a constant desire to go to stool. She is extremely pallid and exhausted. On admission hypogastrium was extremely tender to palpation; no marked distension was observed. *Per vaginam*, slight vaginal hæmorrhage, uterus slightly displaced to the right. In left fornix and posteriorly a rounded mass, presenting semi-solid feeling, with here and there irregularities like small clots. Uterine arteries strongly pulsating. Pains in the breasts, but no secretion.

19th February.—Abdominal section. Left tube removed. Hæmatocele cleared.

22nd February.—Slight left basal pneumonia.

27th February.—Some pus around one or two stitches.

28th February.—Stitches removed.

12th March.—Dismissed well.

Seen in January, 1898, in vigorous health, and with healthy colour in face.

4. Mrs. P., æt. 36, admitted 27th February, 1897, vi-para, last child five years ago. Had then puerperal inflammation, and marked dyspareunia ever since. Last menstruation, October, 1896. Three weeks ago hæmorrhage from vagina began, preceded by rigors, pain in back and hypogastrium, with sickness and vomiting. Ever since has had more or less

vaginal hæmorrhage, with rectal tenesmus and pain in defæcation, tendency to chills and perspirations, and severe abdominal pain, so that she has been unable to leave her bed. On admission, rounded tumour in left hypogastrium extended across middle line to right side, and reaching an inch above level of A.S. spine; tender to pressure. Uterus displaced forwards, 3 inches to sound. Left side and posterior part of pelvis occupied by cystic tumour somewhat tender to pressure.

3rd March.—Abdominal section. Hæmatocele cavity cleared of clots, mole in outer part of left tube, whole tube enlarged, and mesosalpinx enormously thickened. Left tube removed. No embryo found.

20th March.—Dismissed well.

5. Mrs. D., æt. 33, iii-para, last child five years ago, admitted 6th April, 1897. Last menstruation in January. On 10th March felt chilly, then pain in hypogastrium came on, with slight discharge of pale blood from vagina.

12th March.—Pain returned.

14th March.—Pain returned with great severity. Patient was collapsed, and vomited; was put to bed and had to gasp for breath; had noises in the head, and could neither see nor hear distinctly. There was still a slight vaginal discharge.

17th March.—Fleshy mass passed *per vaginam*.

23rd March.—Terrible pain, like labour. Doctor removed some membrane from uterus, then there was free hæmorrhage. Since that no discharge from vagina; but slight shiverings, profuse sweatings, and for a week there was diarrhœa. During last week she has improved in all respects.

On admission, in hypogastrium, rounded firm mass reaching midway between symphysis and umbilicus, not tender and not movable. Uterus fixed in firm mass passing all round it, but most dense posteriorly, where it presents a very firm ridge in the bottom of Douglas' pouch. On firm pressure some movement can be communicated to the uterus. Uterus, 3 inches to sound; fundus slightly to right; anteфлекed; endometrium at fundus slightly tender.

9th to 12th April.—Slight vaginal discharge.

14th April.—Return of pain. Tumour exceedingly tender. Occasional vomiting. Pulsation in fornices marked.

20th April.—Condition as on admission. Acute symptoms relieved.

23rd April.—Was sick yesterday. Had rigor last night. To-day tumour increased in size and more tender.

25th April.—Rigor and pain to-day.

27th April.—Pain and vomiting. Tumour larger.

The tumour now began to diminish, the general symptoms to improve, and on 13th May condition was much the same as on admission.

On 26th May note is:—"Tumour and abdominal tenderness are now almost gone; but on deep pressure in right side of true pelvis a rounded firm mass is distinctly felt, corresponding apparently to the fundus uteri. *Per vaginam*, the hard ridge formerly mentioned can still be felt, but is less marked. Uterus is freely movable, but considerably enlarged. Slight thickening still in fornices."

Patient left hospital on 5th June. General condition of health very poor.

6. Mrs. H., æt. 30, nullipara, admitted 15th April, 1897. Ten years ago one ovary removed for dysmenorrhœa and menorrhagia. Nine years ago curettage of endometrium for same symptoms, after which was better.

June, 1896.—Nephrectomy on right side for tubercular pyonephrosis, menstruation having then been absent for six months. Menstruation returned in September, 1896, and was regular till January, 1897, when the period was painful and discharge great. Since then there has been constant discharge like mixed blood and water. Sinuses are still present in both abdominal and lumbar cicatrices.

17th April.—Examined under chloroform. Left ovary found enlarged and cystic, presenting distinct lobules. Sinuses scraped and packed.

30th April to 5th May.—Very copious menstruation.

6th May.—Left ovary larger than on 17th April. Lumbar and abdominal sinuses healed.

7th May.—Abdominal section. Left ovary adherent all round; it contained several small hæmorrhagic cysts and, on surface, a few round cysts like small cherries tensely filled with serous contents. Tube dilated, adherent round ovary, and filled at outer end by old blood-clot. The fimbriated extremity opened directly into largest cyst of ovary. Tube and ovary removed.

2nd June.—Dismissed well.

7. Mrs. M'L., æt. 36, v-para; last child nine years ago; abortion three years ago; admitted 6th May, 1897. Has always been a strong active woman. Four weeks ago, after nine weeks' amenorrhœa, suddenly fainted and fell to floor.

Next day free hæmorrhage from vagina with large clots, but not so copious as at abortion three years before. Then followed great pain in abdomen, especially in hypogastrium, and a feeling of pressure on the rectum, so that for eight days defæcation was impossible. There has also been pain and difficulty in micturition. She has been confined to bed, and the main trouble is with the stools.

On admission abdomen greatly distended and tender; dull percussion over hypogastrium; tumour in hypogastrium, most marked on right side; rounded firm mass just above symphysis. *Per vaginam*, posterior vaginal wall and lateral fornices bulged down by effusion behind uterus. Portio vaginalis pressed forwards close behind symphysis.

10th to 13th May.—Menstruated. Patient now easier. Abdomen more flaccid; cervix more easily felt; protrusion of posterior vaginal wall less marked; surface of effusion gives feeling of irregularity, as if clots were present.

18th May.—Blood and pus in stool.

19th May.—Effusion much less. Portio vaginalis coming down in pelvis. Uterus slightly movable.

27th May.—Uterus more movable, but still considerable fullness on right side in situation of right tube; distension coming close to lateral border of uterus.

2nd to 4th June.—Menstruated. Went home on 4th June. General condition not very satisfactory, and local pain still considerable.

8. Mrs. H., æt. 28, i-para, eight years ago, admitted 9th June, 1897. In March, 1895, had pelvic hæmatocèle, which was incised *per vaginam*. In February, 1897, after six weeks' amenorrhœa, patient was suddenly seized with pain in left hypogastrium. Did not faint, but vomited, and had to lie down. Two days after there was vaginal hæmorrhage with discharge of membranes. Since then has menstruated twice with pain. There is pain in defæcation, and pain and frequency in micturition, worse at time of menstruation. On admission uterus in normal position, 2½ inches to sound. Tube on right side sausage-shaped, about thickness of middle finger. Adnexa on left side painful, forming a tumour close to side of uterus. Indistinct fullness in Douglas' pouch near posterior extremity of right tubal swelling.

15th June.—Patient left without treatment.

9. Mrs. K., æt. 30, iv-para, last three years ago, admitted 29th June, 1897. On 8th June, after seven weeks' amenorrhœa

(last menstruation 19th April), was suddenly seized with severe pains in lower abdomen like labour pains, accompanied with faintness and profuse discharge of thick reddish matter from vagina. Pains recurred two days after, with a bearing-down feeling and constant desire to micturate. This feeling and the vaginal discharges have continued till admission. On 26th June pains became excessive, so that she perspired freely, and she had the same faint feeling as on 8th June, but in a greater degree. Since then she has had rectal tenesmus, and has attempted defæcation frequently, but without stool.

On admission, fulness in hypogastrium; dulness to percussion over right iliac region, and extending nearly to middle line. Tumour in right side corresponding to dull percussion, but reaching on left side nearly halfway between umbilicus and A.S. spine. *Per vaginam*, Douglas' pouch distended by effusion. Right fornix full, and uterus pushed slightly to left. Cervix pressed forwards towards symphysis.

1st July.—Abdominal section. Pelvis and lower abdomen filled with blood-clot. Right tube contained large fleshy mole in outer part. Left tube cystic, containing blood in outer part. Both adnexa removed.

3rd July.—Bowels moved for first time since 26th June.

11th to 15th July.—Attack of cystitis.

30th July.—Dismissed well.

10. Mrs. M'G., æt. 23, nullipara, admitted 29th October, 1897. In February, 1897, had pelvic abscess, which was opened from posterior vaginal fornix. Was well till 8th October except for bearing-down feeling on left side on exertion. On 5th October began menstruating after a usual interval of six weeks. On 8th October, after exertion, she suddenly felt severe pain in back. Next morning abdomen was swollen, feeling as if it would burst, and pain in back was very severe. This pain has kept on increasing till admission, and she spent the last night on her knees on the floor. She has constantly a bearing-down feeling as if the bowels would move.

On admission abdomen slightly distended and tympanitic, tender all over, but specially so in hypogastrium; fulness and dulness in left iliac region and extending, but less distinctly, into right iliac region. *Per vaginam*, cystic protrusion downwards of posterior fornix. Uterus crushed forwards close behind pubis. *Per rectum*, whole pelvis seems filled with firm effusion, somewhat irregular, suggestive of blood-clot.

30th October.—Abdominal section. Adhesions of bowel and omentum over pelvic organs. Cyst (ovum?) in left tube

emptied by trocar before removal. Right appendages inseparably matted to parts around were not disturbed. Behind uterus and below hæmatocele cavity, a cavity with smooth walls, with purulent and serous contents (the remains of the pelvic abscess of February?). This was drained by gauze *per vaginam*, and abdominal wound closed. Tedious convalescence, complicated with fistulous opening between bowel and lower end of abdominal wound.

31st December.—Dismissed well.

11. Mrs. H., æt. 21, nullipara, one abortion at second month (September, 1896), admitted 7th November, 1897. Four weeks before had a chill during menstruation, and her doctor said she had inflammation of the bowels. Two weeks later pain became suddenly more severe, so that she sent for her doctor during the night. It was located in hypogastric and right iliac regions. She vomited everything she took. She was thought to have "displacement of a womb," or a "tumour behind the womb." Felt a good deal better for a few days before admission.

On admission fulness in right iliac and hypogastric regions, where there is dull percussion and tenderness to palpation. *Per vaginam*, uterus is crowded forward behind symphysis. Douglas' pouch is occupied by a cystic mass passing towards both sides of the pelvis, but occupying chiefly the right side. It is not tender to pressure, and gives the feeling as if fluid were somewhat inspissated or contained within very thick walls. *Per rectum*, the same cystic feeling is given.

10th November.—Effusion is diminishing. Uterus receding from pubis.

16th November.—Remains of effusion form irregular hard mass, most marked in posterior left quadrant of pelvis, but extending across Douglas' pouch to right quadrant.

20th November.—Cervix now in normal position. Corpus uteri still somewhat fixed. All that is left of the effusion forms strands of firm tissue passing transversely across Douglas' pouch and towards the sides of the pelvis. Uterus measures normal length and is in normal position.

12. Mrs. M., æt. 21, i-para, September, 1896, admitted 29th November, 1897. Had a supposed abortion in June, 1897, at three months; had then severe hæmorrhage. Five weeks ago, about time menses were due, had a severe flooding, followed a fortnight later by discharge of membranes, which

doctor thought part of an ovum. Pain in hypogastrium has been very severe, and bleeding has continued.

On admission extremely weak and anæmic. Abdomen not very tender. Feeling of tumour in lower abdomen, especially in right of hypogastrium. *Per vaginam*, os patent, uterus displaced towards the left. To right of and behind uterus, but not filling Douglas' pouch, an irregular rounded doughy mass, somewhat tender to pressure, about size of orange. Pulsation in right uterine artery very marked. Sanious discharge from uterus. Uterus measures 3 inches.

2nd December.—Mass increasing, pain excessive, still some uterine hæmorrhage.

4th December.—Abdominal section. Right tube formed a cylindrical tumour about 3 inches long and $1\frac{1}{2}$ inch in diameter, surrounded on all sides by clots; removed. Left appendages found normal and left intact. Hæmatocele cavity cleared of clots, and saline douche used.

18th December.—Dismissed well.

13. Mrs. S., æt. 30, iii-para, last two years ago, admitted 10th January, 1898. Last menstruation, 4th September, 1897, when discharge was very slight. On 7th November, when doing her morning work, she suddenly felt very cold and shivered. Returned to bed, was seized with great abdominal pain. The abdomen swelled greatly, became very hard, and she vomited frequently. Since then till a few days ago she has vomited almost everything. Has had night sweats, especially when pain was severe. On 8th January a large quantity of reddish material came from bowel, and there is still some coming at time of admission. For some days before this discharge the pain in the back assumed a throbbing character. There has been no hæmorrhage from the vagina, but leucorrhœal discharge since the menstruation in September. She had believed herself pregnant, but her doctor thought not.

On admission patient in extreme degree of emaciation and exhaustion, body giving off a disagreeable stench, abdomen distended and tympanitic to percussion. Palpation reveals a tumour occupying all lower abdomen nearly to level of umbilicus. There is pain on pressure, especially in hypogastric and right iliac region. Small firm body felt just above right ramus of pubis. Cervix soft with patulous os displaced forward close to symphysis, sound passes $2\frac{1}{2}$ inches. Pelvis occupied by doughy mass projecting further downwards in right fornix, but very prominent also in Douglas' pouch. On deep palpation

it feels somewhat regular, but no absolutely hard portions are felt.

22nd January.—Abdominal section. In deep layers of abdominal incision a thick fibrous mass was cut through, and then a cavity was opened containing foetid greyish fluid, which welled out of the wound in great quantity. With it protruded first one lower limb of a foetus, and gradually the whole foetus was pulled out, about $4\frac{1}{2}$ inches long, macerated, and decomposing. No distinct placenta was made out. Cavity was washed out and drained.

15th February.—Went home well.

14. Mrs. S., æt. 23, i-para, twelve months ago, admitted 20th January, 1898. On 17th December, when a week better of a menstruation, was suddenly seized with violent pain all over abdomen, but without sickness or faintness. The pain continued severe for twenty-four hours and then abated.

23rd December.—Pain returned with greater severity, accompanied by vomiting and purging. In three days she again rose from bed, but on 31st December the pain returned and has continued ever since, so that she has been confined to bed. For some weeks previous to 17th December she had pain in both loins, worse on exertion. She was nursing her child, and during lactation menses came at intervals of six weeks, but between September and November she had an interval of eight weeks. Vaginal hæmorrhage came on on 5th January, and continued very free till 13th.

On admission abdomen slightly distended, tympanitic to percussion all over except in hypogastrium. Dulness extends more than half way to umbilicus. A firm mass is felt extending across hypogastrium from left to right. It presents two distinct portions, the larger, harder and more prominent, occupying the right side, the highest point being about $1\frac{1}{2}$ inch below level of umbilicus. The left portion is farther from the surface. These portions are continuous above the symphysis, and on depression are felt to pass into each other posteriorly. *Per vaginam*, portio vaginalis is close behind symphysis. Os transverse, bounded by narrow lips; finger can be introduced between portio vaginalis and pubis. Posterior fornix bulged downwards so as to form a firm elastic tumour, which is continued towards both sides as a flatter mass; uterus, $3\frac{1}{2}$ inches. Fundus towards middle of right Poupart, pulsation in fornices.

25th January.—Abdominal section. Uterus and right tube separated from adherent omentum and bowel. Right tube

then raised out of blood-clot, ligatured, and excised. Left tube and ovary diseased, and also removed. Hæmatocele cavity cleared out, and saline douche used.

11th February.—Went home well.

15. Mrs. F., æt. 38, vii-para, last child fifteen months ago, admitted 3rd February, 1898. On 3rd January was suddenly seized with severe bearing-down pain in hypogastrium, like labour, became faint and cold, and vomited; had to be lifted into bed; attacks of the same kind occurred on three succeeding nights, not so severe, but each causing her to vomit. Diarrhœa also set in. The worst attack of all occurred on 31st January, but she had another last night—2nd February. She ceased nursing her last child in end of October, but menstruation returned only on 2nd January; it was very profuse, and lasted eleven days; since then no vaginal hæmorrhage. For four days before admission has been unable to pass urine, and after admission catheter was used.

On admission whole abdomen swollen and extremely tender, whole lower abdomen occupied by tumour up to a finger's breadth below umbilicus, but reaching above the level of the umbilicus on the left side. The greatest bulging is at the level of the anterior spines and slightly to the left of the middle line. *Per vaginam*, cervix is high, pressed forward against pubis by a tumour filling Douglas' pouch, and having a doughy elastic feel. *Per rectum*, lumen is encroached upon by the same tumour.

4th February.—Refused to remain in hospital.

16. Mrs. G., æt. 38, iv-para, last nineteen months ago, admitted 8th February, 1898. On 18th January was suddenly seized with severe hypogastric pain, and fainted several times during the succeeding twenty-four hours; had sickness and vomiting; rose at end of a week and went about for six days, when pain returned, and she has been in bed since. Was nursing her last child at time of onset of illness, though menstruation had returned when child was twelve months old, and was regular till 30th December. Vaginal hæmorrhage came on with this illness on 18th January, and has continued very profuse, sometimes containing clots and membranes. Micturition and defæcation are painful.

On admission, abdomen distended, clear to percussion except in hypogastrium. Tumour feeling in lower abdomen up nearly to level of umbilicus; resistance most marked in right hypogastrium. *Per vaginam*, os irregular, uterus embedded in

effusion which fills Douglas' pouch and passes rather more to right side of pelvis than left. It slightly depresses posterior fornix, where it presents an irregular surface, as if composed of more solid pieces lying amid softer material. *Per rectum*, the same impression is given to the finger. Slight pulsation in uterine arteries.

12th February.—Abdominal section: Left tube cleared of omentum and clot, and raised out of pelvis; ligatured and excised. Hæmatocele cavity cleared of clot, which reached up into the iliac fossæ, especially on right side. Saline douche used.

5th March.—Patient well, left hospital to-day.

ON CYSTS OF THE PREPUCE AND RAPHÉ, WITH AN ILLUSTRATIVE CASE.*

By GEO. HENRY EDINGTON, M.D., M.R.C.S. ENG.,

Surgeon to the Central Dispensary, and Extra Surgeon to the Dispensary
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CYSTS of the prepuce receive but scant notice in the general text-books of surgery, and it is partly on this account that I now record the following case. I have been led, however, to do so also from the fact that recently cysts in this region have been engaging the minds of some writers in connection with their probable origin in a congenital abnormality.

I shall first notice a case which has come under my own observation, and then refer to the literature of the subject.

Willie D., aged 1 year, was brought to the Central Dispensary on 27th October, 1897, on account of his being the subject of phimosis, accompanied by a small "lump" at the distal extremity of the prepuce. This lump was first observed when he was 3 months old, and it increased in size till he reached the age of 6 months, since when no alteration in dimension had been noticed. It was stated, however, that, after ceasing to enlarge, the swelling had become harder than when first noticed.

The prepuce (Fig. 1, p. 423), which was long, presented on inspection a spherical swelling on the under aspect of the free margin, with the antero-posterior vertical meridian corres-

* Paper read and specimen shown at the meeting of the Glasgow Pathological and Clinical Society, 11th April, 1898.

ponding to the raphé. The skin over the upper surface of the swelling was apparently much thinned, and there was some translucency apparent, although this was not tested with artificial light. On palpation there was some tenseness, but the impression conveyed was that we were dealing with a cyst, probably sebaceous, and not a solid tumour. The growth was purely preputial in its connections, and moved freely with



FIG. 1.

Parts removed by circumcision ; natural size.

the foreskin, being without attachment to the glans. The preputial orifice was contracted so that the glans could not be uncovered, but the cyst took no part in preventing retraction of the foreskin. The child was otherwise normally formed, but was small for its age.

Circumcision was performed on account of the phimosis, and the part removed was placed to harden in spirit, the swelling being left unopened. After hardening, the specimen was opened up along the raphé, and on opening into the swelling



FIG. 2.

Specimen opened up from below in line of raphé. Irregular deposit of fatty material shown on surface of cyst wall. Behind the cyst is the raw subcutaneous surface of the prepuce, also a fringe of the mucous layer.

it was found to be a cyst, situated in the skin portion of the prepuce and abutting behind and slightly above on the under surface of the mucous portion (Fig. 2). The diameter of the cyst was .8 cm. The cavity was empty in great part, and on the inner wall was a somewhat irregular deposit of fatty material. This presented an uneven surface, the deposit being thicker in some parts than in others, and where the wall of the cyst was visible it had a smooth, almost glistening, appearance. The

emptiness of the cyst was due evidently to absorption of the fluid part of the contents during the hardening process.

The solid contents were examined microscopically, and were seen to consist of squamous epithelial cells and a few leucocytes, all more or less showing fat-droplets in their substance, also free fat-droplets. The epithelial nuclei were easily stained with carmalum, but the leucocytes did not take up the colouring matter. No crystals were observed.

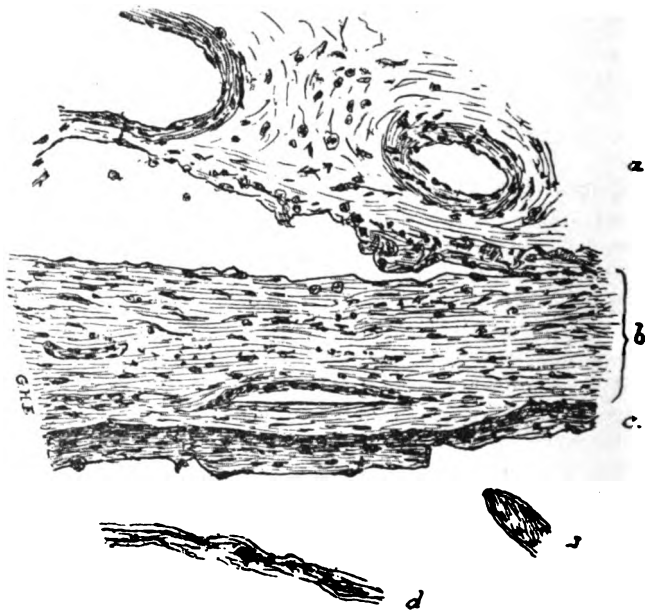


FIG. 3.

Portion of cyst wall, from proximal part of specimen, showing (a) loose subcutaneous tissue with large vessels; (b) firmer layer of connective tissue forming part of wall; (c) epithelial lining of cyst; (d) detritus in cyst cavity (desquamated layers of epithelium). (From a micro-photograph taken by Mr. Archibald Young, M.B.)

A portion of the cyst was embedded in paraffin, and sections were cut comprising the complete circumference in the antero-posterior vertical direction. They were stained in the following different ways:—(a) with acid hæmalum; (b) carmalum and picric alcohol; and (c) by Gram's method. After staining, the sections were cleared with xylol, and mounted in Canada balsam.

Microscopic examination.—With Zeiss objective AA and No. 3 eyepiece, the cyst was seen to possess a lining membrane,

separated from the preputial epidermis by a layer—varying in thickness and being much thinned out at the distal portion of the cyst—of fibrous tissue, corresponding to the dermis. No layer of true subcutaneous tissue was present, save at proximal part, *i.e.*, between cyst and meatus, and here there were many large vessels in the loose fibrous tissue (Fig. 3, p. 424). The lining membrane was very distinctly stained, and its appearance suggested an epithelial structure. With D objective, the lining membrane was seen to consist of several layers of flattened epithelium. Externally the stained nuclei were seen closely packed, but as one passed towards the cyst cavity they became much fewer, and the superficial layers (next the cyst cavity) assumed a homogeneous yellowish appearance, contrasting with the deeply-stained *stratum corneum* of the epidermis. The nuclei were elliptical and were arranged with long axis parallel to the surface of the wall. On the surface of the cyst wall was seen fatty *débris* peeling off in layers. The wall presented no prominences, and no papillæ were present in the surrounding fibrous tissue.

The above description is from a specimen stained by hæmalum *alone*; the carmalum and picric alcohol showed innermost layers of cyst wall as a deep yellow homogeneous structure. Examination of section stained by Gram's method demonstrated the presence of eleidin-holding cells. These cells were irregularly situated, and did not form a continuous stratum.

LITERATURE.

One finds little mention made of the condition in the general surgical text-books. Erichsen¹ states that "sebaceous cysts are occasionally met with, usually on the under surface of the penis or prepuce. Dermoid cysts are very rare; they have been found in the raphé, on the under surface of the penis, along which the two halves unite to close the urethra."

Henry Morris² writes, "Sebaceous cysts occasionally occur in the prepuce. . . . Cysts connected with the glands behind the corona have been met with, sometimes single and as large as a hen's egg; sometimes multiple and varying in size from a shot to a horse-bean."

In Heath's *Dictionary*, Jacobson³ mentions sebaceous tumours as being "occasionally met with on the penis."

On looking into works dealing specially with affections of the genito-urinary organs, references are made to the subject under notice somewhat as follows:—

Jacobson⁴ mentions that sebaceous cysts are occasionally

met with in the long prepuce of boys. The duct of a sebaceous follicle may readily become blocked owing to irritation accompanying a phimosis. He removed two by circumcision, each on the under surface of the penis, with the raphé running over it. One was the size of an olive, the other of a small pea. He also quotes Cruveilhier⁵ as to the occurrence of cysts developed from the modified sebaceous glands behind the corona.

Podrazki⁶ simply remarks that new formations occur in the prepuce not at all seldom; that sebaceous cysts are to be observed fairly often, singly or in groups, pedunculated or sessile.

Kocher⁷ describes cysts with fluid contents, and also atheromatous cysts. He considers both forms to be regarded as retention cysts, and mentions the raphé as being their common situation.

Kaufmann⁸ states that atheromatous cysts are more common in connection with Tyson's glands than with those of skin of penis. The smaller cysts are usually multiple; the larger, solitary. He mentions four cases of large cysts, one of them observed by himself.

Bland Sutton⁹ mentions that sebaceous cysts "are not uncommon in the skin of the penis and scrotum."

On turning up the recorded cases, one finds that the cystic formations in this region may be divided into four groups:—
1. Sebaceous. 2. Mucous. 3. Congenital (this last may include the former two). 4. Traumatic epithelial (implantation).

1. *Sebaceous* arise in connection with two sets of glandular structures—(a) those on the inner aspect of the prepuce (Tyson's), and (b) those on the outer aspect.

(a) *From Tyson's glands.*—Instances of these are reported by Cruveilhier,⁵ who mentions a cyst the size of a small hen egg being found in a cadaver. The cyst lay between the mucous and cutaneous portions of the prepuce, and, in his opinion, originated in one of the follicles on the inner surface of the foreskin.

Dunlop¹⁰ reports a case in which several small nut-like bodies occurred on the corona. These bodies were hard and horny to the touch. On pressure, one of them discharged pus. "Growths" had been removed two years before, and then reappeared. On removing the recurrent nodules they were found to be cysts containing sebaceous matter undergoing change.

Fano¹¹ mentions the occurrence of a cyst in a case of

phimosis in a child aged 3 years. After the skin was removed by circumcision, the mucous layer of prepuce was reflected from glans on the right side without difficulty, but on the left it was adherent, and on being forcibly raised a sebaceous cyst was found between it and the glans. The cyst had circumscribed smooth walls.*

(b) *Those arising in connection with the glands on the outer aspect of the prepuce.*—Fano¹¹ reports a case of a child, æt. 2½ years, with four small cysts on prepuce. H. J. Bigelow¹² records the removal of a "wen of the prepuce." The tumour was congenital, had increased slowly, and was the size and shape of an acorn. It was fluctuant. Particulars as to the relation of the parts not given. W. Fairlie Clarke's case¹³ was that of a tumour, the size of a walnut, which hung in a pendulous manner from the free border of the prepuce. The patient was aged 39, was married, and the father of one child. The tumour had been present ever since he could remember, and had recently been growing rapidly. It contained semifluid substance of a fawn colour, which on microscopic examination was found to be composed of cholesterine plates, oil globules, and granular matter. The patient had also a large sebaceous tumour on the scalp. Mettenheimer¹⁴ mentions an appearance as of milium at the preputial orifice. He also instances a case of a pedunculated sebaceous cyst on the under surface of the prepuce of a child aged 7½ years, and looks on the condition as of uncommon occurrence in a child. The cyst was observed at or a few days after birth as a small lump, which had since grown. The prepuce was long, but could be retracted easily.

Griffon and Ségall¹⁵ report a case of cyst on the upper aspect of the penis, from a lad 18 years of age. Present since early in infancy. The lining membrane consisted of several layers of stratified epithelium. On surface were flat cells, some with, others without, nuclei, and projecting into cavity of cyst as scales; the next layer was composed of cells corresponding to mucous layer of Malpighi, and the next of cylindrical epithelium. Brownish pigment infiltrated middle and deep layers. In no part were there glands or hair-follicles. The authors incline to the belief that the case is one of dermoid cyst.

2. *Mucous cysts* are mentioned by Morgan¹⁶ as being comparable to similar formations occurring on the lips. These

* I think that it is questionable whether this was a true cyst or merely a collection of sebaceous matter occurring in a case of adherent prepuce.

are apparently not so commonly met with as sebaceous cysts, as, in a paper by Mermet,¹⁷ only four occur in a list of twenty, fourteen being sebaceous, and two fistulous, cysts. They have mucous contents, and are lined with epithelium which approximates to the mucous type. One case of Redard's¹⁸ showed cylindrical cells lining the cyst cavity.

3. *Congenital cysts of the genito-perineal raphé.*—These arise in connection with the embryological development of the parts, and the following sketch of the development, summarised from Mermet's paper, may serve to explain their genesis:—

At the end of the first month of intra-uterine life, the genito-urinary and intestinal tracts open at the hinder end of the embryo by a common cloaca. Towards the middle of the second month, the separation of the genito-urinary from the alimentary tract is brought about either by the spur (*éperon*) between allantois and hindgut growing downwards (*éperon périnéal*) or by the ingrowth of two lateral folds (*plis cloucaux*). As a result, the cloaca is subdivided into an anterior uro-genital and a posterior rectal cavity, with corresponding openings on the surface. In the course of the third month secondary folds are developed bounding these two orifices, and in front of the anus they unite in the middle line to form the perineum. From the sixth week an eminence (genital tubercle) is situated in front of the uro-genital opening, and grooved on its under surface by the urethral furrow. A raised fold (*bourrelet génital*) passes backwards from the eminence and surrounds the uro-genital opening. The edges of the furrow (*urethral folds*) approach one another towards the end of the third month, and by their coalescence complete the furrow to form the urethral tube. The junction is indicated externally by the raphé, and "congenital cysts" may be formed from the vestigial epithelium at the line of junction of the folds. The coming together of the lateral portions of the *bourrelet* forms the scrotum, with the scrotal raphé indicating the line of junction. The epithelium lining the urethral tube assumes mucous character, and, according to the situation of the vestigial epithelium—deep, near the urethra, or superficial, near the skin—you may have mucous or dermoid cysts formed. Besides cysts of globular form, one sometimes meets with long closed tubular cavities running parallel to the urethra and raphé, and sometimes described as urethral pouches, and giving rise to the condition known as double urethra. These are often of moniliform type.

It follows from the above that the number of cysts present

may vary. More usually you have a single cyst, and when "multiple" cysts are said to exist they are, as a rule, but subdivisions of a moniliform cavity. Of necessity their position corresponds with the middle line. The wall may be irregular, but is most often smooth and of whitish colour. The mucous cysts especially present an irregular surface on the inner wall. The character of the contents depends, of course, on the nature of the lining cells of the cyst (dermoid or mucoid). Sebaceous contents do not show hairs, teeth, &c., but cholesteroline plates are present in more or less abundance. The sebaceous matter may undergo liquefaction, and this is instanced, according to Mermet (*loc. cit.*, p. 397), in an observation by Bauchet entitled "Mucous Cyst in a Sebaceous Follicle."

During the present year, Thöle,¹⁹ in a paper on "Congenital Cysts of the Genito-Perinæal Raphé," relates a case, and also reviews the work of former observers. He founds the assumption of the congenital origin of a cyst on its site and microscopic characters, and not on its alleged time of appearance. If the cyst can be explained only on anomalies of development, then it is congenital (*loc. cit.*, p. 448). He lays stress on the relation of the cyst to the raphé. His own case showed the cyst to lie somewhat to the right of the middle line, but this was associated with a similar deviation of the raphé. The cyst was moniliform, and occurred in a case of slight hypospadias. Transverse serial sections showed the upper wall of the cyst to have a cylindrical epithelial lining, that of the lower being formed by flattened epithelium, which in places had a direct connection with the epidermis in the middle line. The lower wall showed epidermal pigment; this was absent from the upper wall, as also was cornification. The cylindrical cells were derived from those of urethra; the squamous from those of epidermis. The hypospadias was a further evidence of developmental error.

A case reported by Cestan²⁰ may be mentioned here. This was a mucous cyst of glans on the right lip of the meatus. The author asks if it should not be classed among the congenital cysts.

Shattock,²¹ in a recent number of the *Journal of Pathology and Bacteriology*, descants on the significance of eleidin-containing cells in a cyst wall. He demonstrates their presence by Gram's method of staining, and he declares that they confirm the origin of the cyst from epidermis, as they are contained in the stratum granulosum. He states that these cells line the hair-follicles to their deepest limits; hence, "in

sebaceous cysts . . . a stratum granulosum is found" (*loc. cit.*, p. 127). He mentions the case of a cyst in the neck, with a lining of stratified squamous epithelium, and containing clear flattened epithelial cells, fatty leucocytes, and a little free fat. There was no stratum granulosum present, and he therefore classified the cyst as mucosal.

This contrasts with Mermet's description of the epithelial lining of a dermoid cyst as having a thin stratum mucosum, stratum granulosum furnished with eleidin, and a horny layer whose most superficial cells desquamate to form a *débris* in cyst cavity (*loc. cit.*, p. 402).

4. *Traumatic epithelial cysts.*—Thöle quote Trzebicky's two cases of cyst occurring in Jews, and lying to left of middle line. Trzebicky suggests a causal relation between their formation and the ritual circumcision, in which case they would fall to be classified as traumatic or implantation epithelial cysts.

Péireire²² reports a case of sebaceous cyst of the prepuce, which had been present since birth, in a subject aged 40 years. The cyst was situated on the inferior aspect of the prepuce, and was covered by the expanded frænum. The patient wished the growth removed, as it interfered with the sexual act. Péireire insists on the rarity of these tumours. Microscopic examination was made by Pilliet,²³ and showed the cyst to be lined by several layers of epithelium, the deeper polyhedral, while the more superficial cells were flattened, without corneous transformation, and preserving their nuclei at the same time that the cytoplasm was charged with fat. Their desquamation formed the sebaceous contents of the cyst. In no part were crypts or Tyson's glands observed. There was a round-cell exudation in the substance of the dermic papillæ, and, on account of this, Pilliet suggests the theory of the cyst being formed by traumatic epithelial inclusion.

Note.—I saw my patient on 27th March, 1898, and observed a small bud on the left lip of the meatus. It seemed solid, and was covered by the epithelium of the glans. It may have been present originally, but was not noticed at the time of the operation (*cf. supra*, Cestan).

CONCLUSIONS.

I have come to the following conclusions with regard to the case detailed at the commencement of this paper :—

1. The flattened layers of epithelium, small quantity of solid contents, and absence of cholesteroline crystals are quite in keeping with the theory of the cyst being of mucosal origin. This view is supported by the translucency in the fresh state.

2. The growing scantiness of stained nuclei in the superficial layers of epithelium of the cyst wall leans more to the view that the cyst is one of the sebaceous class, and this is determined by the presence of a stratum granulosum as shown by the eleidin-holding cells. The paucity of solid contents is paralleled by Bauchet's case, quoted by Mermet (*loc. cit.*, Obs. iv).

3. The relation of the cyst to the raphé is suggestive of a congenital origin.

4. There is no evidence of its being a traumatic epithelial (implantation) cyst.

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MEETINGS OF SOCIETIES.

GLASGOW MEDICO-CHIRURGICAL SOCIETY.

SESSION 1897-98.

MEETING VI.—4TH FEBRUARY, 1898.

The President, DR. G. S. MIDDLETON, in the Chair.

I.—CASE OF DISLOCATION OF THE LENS OF OVER TWENTY YEARS' STANDING.

BY DR. ROWAN.

Dr. Rowan showed a patient with dislocation of the lens of over twenty years' standing, and read the following notes:—

J. S., æt. 48, glassblower, was admitted to the Glasgow Royal Infirmary in February, 1895, complaining of cough, spit, slight hoarseness, and pain in the left side. On admission, among others, the question of aneurysm was raised, and this at first sight seemed supported by the condition of the pupils, as they were unequal, the left being the larger. I do not think it is necessary to go any further into the patient's general condition, which I may say in passing is one of chronic bronchitis with laryngitis. I bring him before you to-night simply on account of his eyes.

I shall first briefly give you the notes I made on his right eye in February, 1895—*i.e.*, three years ago:—

R. V. = $\frac{1}{8}$ (roughly).

c. + 3D. sph. = J. 2 (with difficulty) at 18 cm.

Eye movements normal.

Pupil reacts to light and accommodation, though somewhat sluggishly.

Ophthalmoscopic Examination.—Pupil dilates somewhat irregularly under homatropine. No adhesions.

Fundus practically normal.

L. V. = $\frac{1}{8}$ (roughly).

c. + 3D. sph. = J. 1 at 18 cm.

Eye movements normal.

Pupil dilated and fixed, reacting neither to light or accommodation. Iris tremulous at nasal side.

This is the eye to which I wish to draw your attention.

Twenty years ago patient was struck on this eye with a raw potato. He consulted no doctor, but applied poultices. He was blind with this eye for three weeks, most probably due to hæmorrhage; but gradually sight returned, though for some years he saw dark streaks, especially when looking into a bright fire, so much so that he sometimes covered it when looking into the furnace. These streaks have long since disappeared. His only trouble now is, when looking into a bright fire he does not see as clearly as he would like. At no other time does he find his eyesight in any way deficient.

This, he states, is the better eye, and he always uses it alone for reading. About this there can be no doubt, for he has removed the right lens from his spectacle frame, as he found the two eyes confused him. On careful questioning, it appears he relies chiefly on his right (the uninjured) eye when at work, but on this point it is very difficult to be certain.

Ophthalmoscopic Examination.—The lens is dislocated backwards and to the temporal side. With a high plus glass slight lenticular opacities are seen passing from the upper and temporal side downwards and inwards, also a slight opacity more central. The dark edge of the dislocated lens is seen on the nasal side. The pupil is widely dilated, and by looking between the edge of the lens and the iris with a + 10 D. behind the mirror of the ophthalmoscope some vessels can be distinctly seen on the fundus. This proves the eye to be emmetropic or nearly so.

Ophthalmoscopic examination through the dislocated lens reveals a practically normal fundus. The lenticular opacities are too slight to interfere in any way with the examination. On covering the right eye monocular diplopia is easily demonstrated. A pencil held to the right side is seen with a shadow accompanying it; when held to the left side two pencils are seen; when held centrally and up there is a shadow; and when held centrally and down the pencil is seen as one distinctly. This latter circumstance agrees well with the fact of his using this eye for reading.

Patient was readmitted in December, 1897, when I found a considerable change in this eye. The lenticular opacity was increased, the lens being all hazy, and it seemed more movable than formerly.

Pupil as at former note.

Patient has not been able to read with this eye for over three months.

I again examined him on 25th January, 1898, and on this occasion for the first time had the advantage of a dark room, as formerly I had to examine him as he lay in bed in the ward, which could not be darkened.

While the eyes move well in all directions, there is a tendency now for the left to roll outwards. This is especially noticed when making his eyes converge. After converging for a certain distance the left ceases to do so, and rolls out. This is due probably to the deficiency of sight. There is no corneal astigmatism. Tension normal.

L.V. now = hand movements at temporal side at a distance of 15 cm.; at this distance he counts fingers (?)

He says he got a drop of tar in this eye in July, and that since then it has been gradually getting dark. Since this darkness came on—i.e., about four months ago—he has confused things in artificial light though not in daylight. Thus, when the lamps are lit he sees three objects. This interfered with his work so much that when artificial light was used he covered this eye. Here we have an example of ordinary diplopia plus monocular diplopia.

Part of his work as a labourer (he had to give up his trade about three years ago on account of his general health, not on account of his eyesight) was to lift pipes. This he and another did by putting sticks in. He could do this till about five months ago, when he found he often missed the end of the pipe, putting his stick on the outside instead of in the inside.

About eleven weeks ago it appeared to him as if he were looking through drops of oil, and the sun had the appearance of a rainbow.

Ophthalmoscopic examination shows a large retinal detachment downwards and outwards, seen indistinctly through the hazy lens.

I also examined the right eye on 25th January, 1898, and found eye movements normal, tension normal, 3 D. corneal astigmatism by Javal's astigmometer.

$$R.V. = \frac{6}{37} \text{ (letters).}$$

$$c. + 2D. \text{ cyl. ax. vert.} = \frac{6}{17}, \text{ not improved further by cylinder or spherical.}$$

$$= J. 14.$$

$$c. - \frac{+ 3D. \text{ sph.}}{+ 2D. \text{ cyl. ax. vert.}} = J. 1 \text{ at } 20 \text{ cm. (with difficulty).}$$

Under homatropine the pupil dilates somewhat irregularly; optic disc pale, especially on the temporal side; vessels somewhat small; some pigmentary disturbance at the periphery.

He does not, and says he never did, use tobacco. No specific history made out.

Some points of interest in this case seem to me to be the importance of ophthalmoscopic examination in many, if not in all, medical cases, the apparent support given to the theory of aneurysm by the condition of the pupils being negatived on ophthalmoscopic examination.

Then one wonders why he preferred his injured eye for reading; and what about accommodation? The lens being displaced backwards would have a certain amount of its refractive power reduced—*i.e.*, in proportion to the amount of the displacement. Would this be compensated for, or more than compensated for, by the lens becoming more convex, being free from the suspensory ligament? One must bear in mind, also, that all assistance to accommodation by contraction of the iris was lost.

I regret I had not an opportunity of testing the refraction carefully when I first saw the patient.

Then, again, how has the retina now become detached? There is the history of some tar getting into the eye, but this or any other external ascertainable fact does not seem sufficient to account for the detachment. Of course, the persistent hard cough may have affected an eye already weakened.

He has also lately been troubled with giddiness, sickness, and vomiting; but whether this is of a cerebral origin or not it is at present impossible to say. Has the dislocated lens anything to do with the detachment? And if so, why now after nearly twenty-five years, and not formerly? If one had removed the lens and detachment followed, one would have been inclined to blame the operation. One reason, I think, why he used the left (the injured eye) for reading is the amount of astigmatism in the right, as on correcting this his vision is greatly improved in that eye.

It seems to me that this case has a bearing on the operation of needling the lens for high myopia, as an important question there is—What effect, if any, has the removal of the lens on retinal detachment?

Here we have a displaced lens remaining clear for over twenty years, and detachment only now coming on.

I hope to be able to follow out the case further, but bring it now before the Society as I think in its present condition it may possibly be of some interest to the members.

In conclusion, I have much pleasure in acknowledging my indebtedness to our President, Dr. Middleton, for his kindness in placing the case and his ward journals at my disposal.

Dr. Middleton emphasised the fact that the inequality of the pupils had led at one time to the suggestion of aneurysm as the cause of the laryngeal affection.

Mr. H. E. Clark said it was interesting to find that the lens could remain so long dislocated without undergoing any change, and that the patient could read with the affected eye. Extensive changes were evidently now taking place. The iris was usually tremulous when the support of the lens was lost, as it was in this case on one side. The case was a warning that it was advisable not to remove every dislocated lens.

Dr. Rowan, in reply, said that operation would not be justifiable in such a case.

II.—SPECIMEN FROM A CASE OF CHRONIC RENAL DISEASE, ILLUSTRATIVE OF EXTREME HYPERTROPHY OF THE LEFT VENTRICLE.

By DR. J. LINDSAY STEVEN.

Dr. J. Lindsay Steven showed a specimen from a case of chronic renal disease, illustrative of extreme hypertrophy of the left ventricle. The patient was a lad of 22, admitted to hospital with extreme dyspnoea. The urine was scanty and highly albuminous, and contained fatty and other casts. There was no dropsy. The lad had been a painter for nine years and a spirit salesman for some months. Both occupations might be regarded as factors in the etiology. The radial arteries were extremely rigid. *Post-mortem*, the usual changes were found in the kidneys, and a quite enormous thickening of the walls of the left ventricle was also observed.

III.—CASE OF SPLENIC LEUKÆMIA.

By DR. J. LINDSAY STEVEN.

Dr. J. Lindsay Steven presented a patient suffering from splenic leukæmia.

A full report of this case, with a clinical commentary, will appear in the forthcoming volume of *International Clinics* (July, 1898). The patient was a Norwegian sailor, aged 18,

who, previous to the onset of his leukæmia, had suffered twice from malarial fever, and once from yellow fever. The symptoms and physical signs were characteristic of the spleno-myelogenous type. Specimens of the blood, stained by Dr. W. K. Hunter, were also shown.

IV.—OLIVER'S NEW HÆMOGLOBINOMETER AND HÆMOCYTOMETER.

By DR. HARRIS.

Dr. D. F. Harris described and demonstrated Oliver's new hæmoglobinometer and hæmocytometer.

The former, he said, was based upon the colour-matching principle of the tintometer, an instrument recently perfected by Lovibond, of Salisbury, for the matching of any colour whatever, and for estimating quantitatively the amount or degree of colour present in any substance, transparent or opaque. A known quantity of blood, received by a capillary pipette, is diluted with water until it fills the mixing cell in which all the hæmoglobin is dissolved out. This cell has a dead white background of porcelain. The diluted blood is then "matched" by comparing it with the standard tints—glasses coloured so that the tints are perfectly non-fugitive—of which standard tints there are six grades of increasing depth of colour. Each grade has been "standardised"—*i.e.*, the percentage of hæmoglobin in the cell full of blood when the blood matches any particular standard tint is known, having been arrived at by chemical analysis of the blood when the standards were being prepared in the tintometer laboratories. The blood-cell and the standards to be compared with it are viewed through a long dark tube in a dark room, candle light being employed. The long tube has two circular apertures in the plate closing it below, so that one sees, on looking down, two brightly illuminated circular areas—the blood to be matched and the standard glass respectively. When the blood matches the standard tint marked 100 degrees it contains 15·5 per cent of oxy-hæmoglobin. Special advantages, besides the dead white background for the colours, are that the illuminant is of standard intensity and of constant chromatic constitution—two properties not to be always found in ordinary daylight.

The principle of the hæmocytometer is, that if one looks across a tube filled with water at, say, a candle-flame, one observes a row of minute images of the flame, due to the

longitudinal fibrillations of the glass acting like a series of lenses. If, however, the liquid in the tube be, like blood, full of minute solid particles, one cannot see this row of images until the blood has been diluted down to a certain point. This point differs according to the corpuscular richness of the blood; and the tube has been standardised (by estimating the corpuscles by Gower's hæmocytemeter) for the various degrees of dilution of blood at which one just sees the horizontal row of images. Hayem's fluid is used to dilute the blood. Leucocythæmia is the only condition vitiating the results in this instrument.

V.—PERFORATED GASTRIC ULCER.

By DR. R. O. ADAMSON.

Dr. Adamson read a paper on the symptoms of perforated gastric ulcer, with notes of two cases, which has been published *in extenso* in the *Scottish Medical and Surgical Journal* for April, 1898.

Dr. James Dunlop said that he was much interested in the paper, as within the last few days he had attended a case resembling in many details those related by Dr. Adamson. His patient presented a history of gastric ulcer followed by general peritonitis. Death followed twenty-two hours after the first signs of perforation. Consent for operation was given too late, as when it was obtained the patient was practically expiring. He wished to draw attention to one symptom—the splashing sound obtained by palpation of the abdomen.

Dr. Middleton had not had much experience of such cases. He could recollect one in which the perforation evidently took place while the patient was breakfasting. Death followed half an hour later. He referred to cases he had recorded in his presidential address, as showing how misleading the symptoms might be. He had no knowledge as to the value of testing for hydrochloric acid in the differential diagnosis of diseases of the stomach.

Dr. Adamson, in reply, said that he might refer to one more point—namely, the variety to be found in cases of perforation of the stomach.

GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY.

SESSION 1897-98.

MEETING VI.—11TH APRIL, 1898.

PROFESSOR SIR W. T. GAIRDNER *in the Chair.*

I.—CASE OF OTITIC EXTRA-DURAL ABSCESS.

BY DR. BARR.

Dr. Barr showed a case of otitic extra-dural abscess over the left sigmoid sinus, with symptoms of general septic infection, successfully operated upon. The patient was a young man, 19 years of age, who had had purulent discharge from the left ear since early childhood, and as a result there was stenosis of the osseous external meatus. Owing to the stenosis in the canal and the development of severe pain over the corresponding side of the head, along with sickness and vomiting, the antrum of the mastoid was opened and curetted, and the posterior wall of the external meatus was removed. The painful symptoms continued in spite of the operation, and repeated rigors now ensued, each one accompanied by very high temperature and followed by marked remission. No intra-ocular changes were found, neither was there any tenderness or swelling over the internal jugular vein, nor any metastatic phenomena. In view of the repeated rigors and other symptoms the sigmoid sinus and neighbouring dura mater were freely exposed by working back from the cavity of the antrum through sclerosed bone, and a considerable quantity of fœtid pus and abundant granulation tissue were found between the dura mater and bone, especially over the sigmoid sinus. These were thoroughly removed. The sigmoid sinus was grey and covered with plastic exudation, but, being soft and elastic, it was not opened. Although rigors occurred on three occasions within a week after the operation, the patient ultimately made a good recovery.

A canal of considerable width, opening behind the auricle and leading into the antral cavity, remained behind perfectly dry and sweet.

Mr. Maylard asked whether the occurrence of rigors in

middle ear disease was to be regarded as suggestive of sinus thrombosis. He recently had a case where shivering was a marked symptom, though not amounting to actual rigors, accompanied by high temperatures. A thrombotic condition of the sinus was suspected, but both the sinus and the brain were found healthy. The patient gradually sank, and died two days after, when a condition of diffuse lepto-meningitis was found.

Sir W. T. Gairdner said that this class of cases was interesting. Of late years he had seen fewer of them owing, he thought, to improved surgery. He put a question at a recent examination bearing on this subject, and found the answers grievously at fault.

Dr. Renton asked if *Dr. Barr* could indicate the class of case in which a sinus thrombosis was most likely to occur. On two occasions he had trephined the mastoid expecting to find a sinus thrombosis, and in both lepto-meningitis was present. One case in particular, where there was marked tenderness over the internal jugular vein, which was ligatured, and in which one would reasonably expect sinus thrombosis, was found after death to be due to lepto-meningitis. Where the symptoms are pronounced the diagnosis is, of course, easy.

Dr. Barr, in reply, said that in the majority of cases of extra-dural abscess there is no elevation of temperature. With the occurrence of rigors phlebitis should be suspected, indicating a degree of septic absorption, although septic absorption may occur without actual sign in the sinus. In sinus thrombosis the present teaching is to ligature the vein and clear out the sinus. *Dr. Barr* thinks this is not always necessary if proper means be taken to remove the source of infection, and thus prevent further absorption. If metastatic abscesses occur then there is no doubt; ligature the vein and clear out the sinus. In regard to the diagnosis of the various conditions, the plan is to follow the routes of absorption; had the case just described been left alone a cerebellar abscess would likely have followed. Unfortunately, students are not compelled to study ear diseases.

II.—EXTRA-UTERINE PREGNANCY.

By DR. J. K. KELLY.

Dr. Kelly's paper appears as an original article at p. 401.

Mr. Maynard said that he was personally interested in the case of *Mrs. H.*, whose kidney he had removed for suppurative

nephritis. The class of case just described by Dr. Kelly occasionally comes into a surgical ward. Such a case he had recently. Abdominal section proved the tumour to be a hæmatocele. Chorionic villi were found on microscopic examination, and a diagnosis of extra-uterine pregnancy established. She made a good recovery, and is now well.

Dr. Renton said he was glad to hear Dr. Kelly recommending the abdominal method of operation; his experience also tended in that direction, though the vaginal method was more suitable in some cases. He was sent for not so very long ago to see a young woman of 20, who was said to be suffering from a rupture of something. There were symptoms of intestinal obstruction, with fæcal vomiting, though the obstruction was not absolute. A swelling could be made out in the right iliac region, which, on examination, proved to be due to extra-uterine pregnancy, the extravasated blood pressing upon the bowel.

Dr. Kelly thanked the Society for the interest shown in his paper, and said that one of the difficulties in the treatment of this condition is the attitude that some take with regard to hæmatocele, recommending in effect that it should be left alone.

III.—SPECIMENS.

BY DR. RENTON.

Dr. Renton showed the following specimens:—

1. The parts from the one side of the chest in a case where he had removed two portions of ribs for empyema seven years ago. The ribs had grown together, and but for the adhesion at the point of incision the lung and pleural surfaces were quite healthy. The lung had expanded, and there was no evidence of any tubercular deposit. The patient had died from a ruptured gastric ulcer, in which operation was not able to secure recovery from the peritonitis which followed the rupture.

Note of dissection of Dr. Renton's specimen of ribs from an old case of empyema, by Dr. Edington.—The specimen was dissected by me at Dr. Sutherland's request, and presented the following features:—Irregularity of outline is observed in the ninth and tenth ribs at a point situated 12 and 10 cm. respectively from the junction of the rib with its corresponding cartilage. The irregularity presents similar features in both of the affected ribs, but the ninth shows, in addition, ankylosis with the rib above, a condition somewhat advanced from that

in the tenth rib. The irregularity in both consists in an upward displacement of the posterior part of the rib, so that the anterior extremity of this part of the rib touches the under margin of the rib above. The ninth is united to the eighth in this way by a bony bridge, measuring 2 cm. antero-posteriorly, about 0.5 cm. vertically, and about 1 cm. from within outwards. This bridge is in relation with the upper angle of what was evidently the cut surface of the bone, and runs from here backwards along the upper margins of the rib. It does not project at all towards the pleura. The anterior parts of the affected ribs lie at a lower level than the posterior, and they are united with the latter by apparently new-formed bone. The posterior extremity of the anterior part of the rib projects on the pleural aspect of the thorax, and the intermediate bone from anterior to posterior parts of the rib has thus a direction upwards and outwards. This bone measures about 1 cm. in antero-posterior length in the ninth; in the tenth it is 2.5 cm. In vertical measurements it compares with the anterior part of the rib as follows:—

Ninth rib	=	1.5 cm.	New formation	=	1.25 cm.
Tenth rib	=	1.5 cm.	„	=	1 cm.

This intermediate portion evidently represents the periosteal new formation after resection of bone, and in both cases the subcostal groove is well-marked, especially in the case of the ninth.

The downward displacement (?) of the anterior portions of affected ribs is probably caused by the action of the diaphragm and transversalis abdominis, but I am at a loss to understand the upward displacement of the posterior parts, the attachments of the erector spinæ theoretically having an opposite effect.

2. Two ovaries, one cystic and the other partially gangrenous, from double twist of the pedicle. The ovary was closely adherent to the peritoneum and drawn up towards the kidney. There had been no elevation of temperature. The patient recovered well.

3. Typical dermoid cyst of the ovary, the size of a football, and a second, smaller, with commencing disease. The patient did well.

Sir W. T. Guirdner said, with reference to the state of the

pleura in Dr. Renton's case of rib resection, that it would be interesting to know how far a serous membrane which has been in a state of inflammation returns to its former state. We frequently see cases of pericarditis, and we do not know what comes of them. He could recall the case of a medical friend of his own, who had severe pericarditis but got well, practised for forty years, and was now retired. What is the state of the pericardium in this case? Has it returned to its former state like the pleura in Dr. Renton's case? Then there were the post-puerperal cases. In most the peritoneum is involved. He had seen a few, but one case of this nature astonished him very much. A lady, the wife of a medical man, had enjoyed uninterrupted good health until after the birth of a child. A condition developed which from the chart might have been considered as tubercular. She recovered, but with considerable matting of the pelvic organs. She had, however, borne several children since. Has this matting disappeared?

IV.—THE PROPAGATION AND DETECTION OF THE CYSTICERCUS CELLULOSÆ.

By MR. A. M. TROTTER, M.R.C.V.S.

Mr. A. M. Trotter showed the heads of *tænia solium* from pork, and read a paper on the propagation and detection of the *cysticercus cellulosæ*.

Measly pork is the common term applied to the invasion of the muscle and connective tissue of swine by the *cysticercus cellulosæ*—the larval form of the *tænia solium* of man.

This condition is extremely common in countries where the habits of the people are not above comment. In rural districts, as a rule, human ordure is deposited out of doors, often in places accessible to these animals. In this way a person affected with tapeworm can infest a large number of swine. An instance has been placed on record by Mosler, where fifteen pigs became infested after breaking through a fence enclosing a privy in which had been deposited stools containing segments of this *tænia*.

The ova contained by each proglottis retain under favourable conditions their vitality for a lengthened period, and are capable of reproducing themselves if ingested. Gaining the alimentary canal, the embryos are liberated through the outer teguments being dissolved by the gastric and intestinal juices. The liberated embryos, by means of their six hooks, penetrate

different parts of the body, and become arrested in the intra-fascicular connective tissue of the muscles or organs in which they have taken up their abode. At the ninth day they measure only 0.033 mm. in diameter; at the twentieth they have attained the size of a pin head; at the fortieth we find them the size of a mustard seed, with head visible and suckers and hooklets recognisable; at the sixtieth day they have grown to the dimensions of a pea, but it is not till the end of the *third month* that their development is complete. The mature cestodes are lodged in small depressions formed for them in the substance of the tissue in which they are found. They are small oval semi-transparent bodies, measuring 6 to 20 mm. in length and 5 to 10 mm. in breadth. Each is surrounded by an adventitious cyst composed of a thin transparent membrane, slightly vascular and devoid of epithelium, which has been formed at the expense of the surrounding connective tissue. Projecting within the caudal vesicle may be seen a small white body, the size of a millet seed, communicating externally by a very minute, almost invisible opening. Gentle pressure is sufficient to evaginate this; care, however, is necessary not to rupture the bladder. These are the heads of the *tænia solium*, and when full grown average in size from .6 to .8 mm. The cysticerci are found almost exclusively in the skeletal muscles, but may also be found in the brain and spinal cord, heart, lungs, spleen, kidneys, lymphatic glands, eyes, testicles, &c. When the invasion has been numerically slight, it is often only after a tedious search that one is able to demonstrate their presence. In most Continental abbatoirs an exacting examination is made of every carcase, with the view of detecting this condition. The "liesen" or layer of adipose tissue lining the peritoneal cavity is removed to permit the examination of a larger extent of muscular surface, as it is well known that the facility of diagnosis is in direct ratio to the extent of surface examined. The butcher, too, is compelled to set aside the "pluck"—that is, the liver, part of diaphragm, lungs, heart, trachea, &c.—and tongue in such a manner that the inspector can at once refer to the carcase to which they belong. These organs and carcase are carefully scrutinised by the veterinary inspector and his attendant. If the examination has proved satisfactory, it is at once stamped "Examined" in several places, thus publicly denoting that it has been inspected by the proper authorities.

It sometimes happens that the butcher, either through accident or design, has scraped them off, but the small

cavities they occupied will naturally lead to a more searching examination, and in cutting into the adjacent tissue one is almost certain to find others. Valuable information may be gained, too, by incising the muscles of the deeper surface of the shoulder, the neck, the fleshy portion of the diaphragm, the triangularis sterni, and the intercostals. Their number in extreme cases may be enormous. Küchenmeister has placed on record an instance where he isolated no less than one hundred and thirty-three in a piece of meat weighing 17 grammes. On calculation we find that each kilogram (nearly 2½ lb.) of this pork contained about eight thousand heads of the *tænia solium*. From a morsel of muscle weighing 5 grammes we succeeded, by a process about to be described, in isolating seventeen heads of this tapeworm, which, no doubt, is very much less than that recorded by Küchenmeister, but when we remember that the consumption of half a pound entails the swallowing of some eight hundred heads of this *tænia*, it must be admitted that the thought is anything but pleasant. The tissues in these extreme cases, if the disease is of long standing, has a very disgusting appearance, which is accentuated when they are cut into, owing to the escape of the fluid contents of the cyst. The condition of these carcasses, apart altogether from the presence of these parasites, are such as to warrant their condemnation, but our systems of meat inspection are not yet so efficient as to prevent their being disposed off surreptitiously. Their naked eye appearances are such as to prevent their being sold in tangible pieces, but, unfortunately, they may be and are safely and conveniently got rid off in the spicy and palatable sausage.

The detection of cysticerci under these circumstances, even when they are present in great numbers, will be found to be extremely difficult, if not impossible, owing to their similarity in colour with the small fragments of fat with which they are closely intermixed. This difficulty has fortunately been overcome by Schmidt-Mulheim, who, taking advantage of the fact that cysticerci resist the action of the gastric juice, advocated that all suspicious food preparations be submitted to artificial digestion. The *modus operandi* is extremely simple. A small quantity of any well-known pepsine preparation is added to a .5 per cent solution of HCl, and to this a sufficiency of the suspected article is mixed in the proportion of 1 to 8. After standing for several hours in a water bath at 40° C., we find that the muscle, fat, &c., has been digested, whilst the cysticerci, if present, are deposited at the bottom of the flask

as small round white bodies. Unfortunately, this method, although thoroughly efficient and reliable, lacks rapidity in execution, a matter of great moment to public health officials when dealing with such perishable commodities. This difficulty, however, would appear to have been removed by Kissling, who recommends that the acet. of soda or potash be dissolved in sufficient quantity to yield a solution with a specific gravity of 1.15. The suspected material and a small quantity of this solution are thoroughly mixed together in a conical test-glass of from 1 to 4 litres capacity till the whole has attained the consistency of thick soup. A large amount of the lye is now added, and the whole stirred, when, should the heads of these *tænia* be present they will separate out and by reason of their greater specific gravity fall to the bottom, where they may be easily recovered and their identity established by microscopic examination. The *tænia solium* is more frequently seen in butchers, sausage makers, &c. This, no doubt, is largely due to the filthy habit the majority have acquired of holding the knife between the teeth whilst dressing or cutting up a carcase. The danger of consuming raw flesh is well exemplified in the German nation, who, as large consumers of raw flesh, suffer severely.

Fortunately, the vitality of the *cysticercus* is destroyed when exposed to a comparatively low temperature. Numerous experiments have demonstrated that although death occurs exceptionally at 40° C., it is not till a temperature of 47° or 48° has been attained that their destruction is at all certain. Exceptionally they live at 49°, and even 50°, but they cannot survive the latter temperature if prolonged for one minute.

Thorough cooking only can be relied on to cause their death. Measly flesh moderately cooked may be still capable of producing this *tænia* when ingested, but it is more especially with underdone meat that there is danger.

V.—ON CYSTS OF THE PREPUCE AND RAPHE, WITH
AN ILLUSTRATIVE CASE.

By DR. EDINGTON.

Dr. Edington's paper appears as an original article at p. 422.

GLASGOW EASTERN MEDICAL SOCIETY.

SESSION 1897-98.

MEETING VII.—26TH JANUARY, 1898.

The President, DR. W. FINDLAY, in the Chair.

DR. JOHN PATRICK read a paper on "The Use of Antiseptics in General Practice."

Dr. Patrick pointed out how difficult it was in general practice to carry out to the fullest the principles of asepticism and antisepticism taught in the schools, and how most general practitioners, despairing of preserving wounds and the material used in their treatment free from contamination, in time gave up the attempt, getting into slipshod habits of doing the minor surgery which falls to their lot. In an address to the students of Glasgow University in 1894, Lord Lister recognised the need of simplification of the antiseptic method, to meet the haste and bustle of everyday general practice, when he said that a 5 per cent solution of carbolic acid in water was a perfectly efficient germicide and antiseptic for all purposes, and that the preparation of the skin for operation or the rendering of a wound aseptic was efficiently done if the "gross dirt" were first removed by washing, and a moist 5 per cent carbolic dressing applied for two minutes. It is to be feared that even this simple method is not adopted by all. The air of consulting rooms and of most rooms in private houses may be presumed to be free from pathogenic micro-organisms if the ventilation is thorough, unless there is a suppurating wound present. The hands of the practitioner can easily be rendered surgically clean by thorough scrubbing with soap and water, paring of the nails, and soaking for two minutes in 1 to 1,000 bichloride of mercury solution or 1 to 20 carbolic acid solution.

Dressings can be kept clean and free from contamination by the use of, for example, the "ever-ready caddies" of tin made by Ferris & Co., Bristol. In these, dressings are put up aseptically in rolls, and only sufficient for use at the time is unrolled and cut off, the remainder being still preserved untouched in the box, which has a close-fitting hinged lid.

Of the various kinds of material for ligature and suture the best is chromic gut, prepared according to Macewen's formula,

to resist the action of tissues for three weeks. Silkworm gut, silk, and horsehair must all be kept in antiseptic solutions ready for use. In preparing antiseptic solutions, liquefied crystals of carbolic acid are the most efficient. The stronger solutions, 1 to 20 and 1 to 40, should have a quantity of glycerine added to prevent stinging of the hands. Corrosive sublimate solutions are easily made by the use of Burroughs, Wellcome & Co.'s solids, put up in portable bottles.

Perhaps the most satisfactory dusting powder is a combination of 1 part iodoform crystals to 3 parts of boracic acid. Dermatol, a basic gallate of bismuth, is a good substitute where the odour of iodoform is considered objectionable or its action on the skin too irritating.

Details were given of the methods to be employed in dealing with wounds and keeping them aseptic, and some good results in very unpromising cases were mentioned.

The mode of preparing the skin for operations was also spoken of at length: by shaving, thorough washing with soap and water, dehydrating with methylated spirit, rubbing with turpentine to remove oily and sebaceous material, cleansing again with spirit, and, finally, the application of an antiseptic wet dressing of varied strength, according to the length of time before the operation.

MEETING VIII.—9TH FEBRUARY, 1898.

The President, DR. W. FINDLAY, in the Chair.

DR. DAVID COUPER read a paper on "The Treatment of Eczema."

Dr. John Wilson pointed out how frequently very severe cases of eczema, especially of the lower limbs, could be dealt with by simple means, such as repeated applications of lint soaked in butter milk.

Dr. Alex. Munro described two cases where a cure had been effected by repeated doses of grey powder.

Dr. Couper, in reply, said that he was disappointed in not having heard a more full expression of opinion as to remedies for eczema according to the experience of the members, and notably as to their experience of the use of ichthyol. *Dr. Munro's* second case he considered not to be one of eczema at all, but a squamous syphilide.

MEETING IX.—23RD FEBRUARY, 1898.

The President, DR. W. FINDLAY, in the Chair.

DR. ALEXANDER PATTERSON read notes of three surgical cases, with specimens and photographs.

1. Charcot's disease of knee- and ankle-joints, for which amputation had been performed.

2. Atrophy, with complete absorption of the upper end of humerus, from some unknown cause.

3. Phimosi for which an alleged circumcision had been performed, but only the skin removed, not the mucous membrane; preputial calculi had formed. These were removed when a true circumcision was performed.

The cases are published in detail in the *Scottish Medical and Surgical Journal*.

MEETING X.—9TH MARCH, 1898.

The President, DR. W. FINDLAY in the Chair.

DR. J. COCKBURN SYSON introduced a discussion on "Cremation and Burial Reform."

Dr. Syson claimed that, whilst one of grave import as affecting the social economy of our ever-increasing population, it was one, moreover, having special claims upon the consideration of members of the medical profession. Whilst improvement had undoubtedly taken place in recent years, our laws affecting burial stand greatly in need of reform, and the public, no doubt guided by temperate and judicious counsel, are ready to abandon some of the dismal and somewhat absurd funeral customs which have sprung from ignorance and superstition. After reviewing the various modes in vogue throughout the world for the disposal of the dead, the interdependence which exists between the animal and vegetable worlds was spoken of. When life has ceased to be, the body only enters upon another stage of that perpetual cycle which connects the animal with the vegetable world. Nature, in conformity with the working of her plan, claims the gaseous

and solid elements of which our bodies are composed to build up and nourish plant life, and these elemental constituents we ought to return to her as speedily, safely, and economically as possible. This cremation accomplished; whilst by hiding the body in elaborate and sealed coffins, and burying it many feet below the surface of the earth, we not only retarded the inevitable working out of Nature's scheme; but exposed the living to unnecessary and disagreeable risks.

Coming to the question of the proposed substitute for ground burial—viz., cremation or fire burial—Dr. Syson reviewed the history of the process from its earliest inception, describing the crises through which it had passed, and how amongst certain nations it had fallen out of use until the modern revival of the crusade which originated in Italy about the beginning of the present century. In 1874 the question was ventilated and advocated in this country by no less an authority than Sir Henry Thomson. This led to the formation of the Cremation Society of England, and to the building of crematoria at Woking and elsewhere, and from that time till now the practice has steadily, though slowly, grown in public favour.

The advantages claimed for fire burial as opposed to ground burial are as follows:—

1. From a sanitary point of view: What the grave does slowly, offensively, and dangerously, fire does quickly, decently, and safely. In this way the designs of Nature are anticipated and furthered, whereas in ground burial not only do we make a crude attempt to thwart the decay which must inevitably come, but by so doing we endanger the health of the living.

2. From an economic point of view: Large sums of money are annually disbursed in expensive funerals, with all the paraphernalia and "trappings of woe" which accompany those functions; whereas, even at present, cremation can be more cheaply accomplished, and if the process were more generally had recourse to, the cost would be a mere trifle compared to that of ground burial. In addition, ground burial monopolises thousands of acres of valuable land which might be used for better purposes than being a mere receiver of decaying matter.

3. From a medico-legal point of view: At present, thousands of bodies are buried annually without medical certification, and many of these may have been the victims of criminal poisoning. If, weeks or months after burial, suspicions should arise, we have, of course, the clumsy process of exhumation, with its attendant uncertainty, and the attempt to discover

and recognise poisons which have either become decomposed, or have become associated with toxic poisons (ptomaines) developed in the body during the process of decay. Cremation, on the other hand, provides against this slipshod method of detection on the lines of prevention being better than cure. By the stringent precautions taken *before* the evidences of criminality have been destroyed, the possibility of error is reduced to a minimum, and the poisoner by design is deterred from risking methods of detection so searching.

4. The opportunity for restoring the remains of the deceased to the precincts of his church, whence it has been necessary to exclude the "corruptible body" by urgent sanitary necessity, is another advantage. The little purified ash that remains after fire burial may either be returned at once to mother earth, or, if so desired, preserved in a cinerary urn of artistic design, and deposited wherever the relatives may elect.

5. Another advantage of cremation is the fact that whilst quite compatible with religious rites, it enables these to be performed in safety indoors, whereas ground burial, taking place as it does in all weathers out of doors, often results in illness—not infrequently death—to some of the attendant mourners.

6. Lastly, cremation protects the interests of the living by destroying instantly all infectious qualities in the body submitted to the process. Every bacillus meets its doom; no nuisance is created; and if it is desired to maintain the poetic sentiment which clings around cemeteries, this cremation can also provide for in the shape of classic buildings, ornamental urns, and artistic grounds, without the attendant effluvia and noxious vapours of the graveyard. The great barriers in the way of progress are sentiment and superstition. Once we have overcome these, we shall see that the most perfect means for the disposal of the dead is cremation.

Dr. John M'Donald maintained that sentiment was not a thing which it was desirable to abolish for a reform which was more or less equivocal. He pointed out that a crematorium could hardly have inspired a Gray's "Elegy."

Dr. Alex. Munro objected to very much that had been advocated in the paper, and showed that the theological standpoint and the teaching of scripture had, in his view, been ignored.

Dr. Malcolm Black suggested that a new race of poets might arise to throw a glamour around the crematory. He was sceptical as to the reality of the supposed danger from

gaseous emanations; only if concentrated would there be any risk to the health of the community.

Dr. John Knight questioned the possibility of zymotic diseases being propagated by earth burial, because, after burial the saprophytic organisms grow with such rapidity that they overcome the pathogenic organisms. But diseases arising from saprophytic germs, as epidemic diarrhoea, have undoubtedly had their origin from burial places. He would suggest that graveyards should be situated far out from towns, and that bodies should not be buried more than about 2 feet below the surface, so that microbic destructive influences could act rapidly.

Dr. Findlay thought the case for cremation had not yet been completely made out. Sentiment is a very proper and beautiful thing, and not to be overcome. He could not help feeling that to our present system we owe a great heritage of poetry which cremation could never replace. He had a vague sensation that cremation dissipates our bodies into utter oblivion.

Dr. Syson, in reply, stated that the time necessary now for cremating a body was one hour. He agreed that sentiment could not easily be overcome, but he thought the public could be educated not to look upon cremation with abhorrence, but to allow its sentimental feelings to be directed into more reasonable and sanitary channels.

REVIEWS.

The Diseases of the Lungs. By JAMES KINGSTON FOWLER, M.A., M.D., and RICKMAN JOHN GODLEE, M.S. With One Hundred and Sixty Illustrations. London: Longmans, Green & Co. 1898.

THE appearance of this valuable work is a suggestive sign of the times. With its publication we have still another indication that the old boundary lines which separated the domain of the physician from that of the surgeon are fast disappearing. We have long been accustomed to the indefinite character of the line of demarcation between medicine and surgery in the treatment of abdominal and pelvic disease, and still more recently it would seem that much of cerebral pathology is

being claimed as within the legitimate sphere of the surgeon's work. We are now beginning to realise that not only the affections of the respiratory organs, but even those of the pericardium, are to be regarded in many instances as capable of being surgically treated. We see in all this that the bond of union between the two great branches of the healing art is year by year becoming firmer, and we augur from it a greatly increased success in our efforts to cure disease. So far as we are aware, this is the first occasion on which a work on the diseases of the lungs has been written by a physician and a surgeon in collaboration; but it is not the first book that has dealt in a special manner with the surgery of pulmonary disease. We would recall our readers' attention to the admirable treatise of Mr. Stephen Paget (reviewed in our pages) on the surgery of the chest.

A glance at the volume under review, however, soon convinces the reader that it will be long, probably very long, before the majority of pulmonary affections pass from the care of the physician to that of the surgeon. By far the greater part of the book is from the pen of Dr. Fowler, who has left comparatively little for his colleague, Mr. Godlee, to write about. We would certainly have expected that in the discussion of the treatment of diseases of the trachea there would have been some room for the expression of surgical views, but apparently the whole chapter is the work of the physician. In the chapter on gangrene of the lungs we might also have expected the pen of the surgeon to have taken part; but here again, so far as we can see, there is no reference to surgery, although we find it if we go on to the section on the surgery of pulmonary cavities. We mention these circumstances simply to show that the affections of the lungs are still mainly in the hands of the physician.

The authors have executed their somewhat laborious task well, and have produced a book which, though not aspiring "to the position of treatise on the diseases of the lungs," will, in our opinion, take rank as a standard work of reference. We are inclined to regard it as probably the most complete work on the lungs that has appeared since the classic treatise of Walsh. What renders it specially valuable is the sound basis of pathological knowledge upon which the superstructure of diagnosis, prognosis, and treatment is built up. The sections on morbid anatomy, etiology, and bacteriology are quite in line with the recent advances, and in keeping with the generally accepted teaching of the day. This, of course, is what we would have expected from a physician who, like

Dr. Fowler, had faithfully served his apprenticeship in the deadhouse. The illustrations form a very valuable part of the work. They have been chosen with great wisdom, and as a general rule have been excellently executed.

It is beyond the limits of the space at our disposal to enter into a detailed criticism of the contents of this large volume; but we may refer to one or two points in order that our readers may gain a general idea of the scope of the book.

The chapter on the anatomy of the lungs, extending to 50 pages, has naturally fallen to Mr. Godlee. It is excellently written, and the beautifully executed illustrations, many of them from Braune's well-known Atlas, add greatly to the value of the text.

Dr. Fowler has prepared the chapter on physical diagnosis, and he has succeeded in producing a most readable article on a subject which is generally apt to be somewhat tiresome to the ordinary reader.

The chapter on bronchiectasis is remarkable as a most lucid and comprehensive exposition of a very difficult subject, and, based as it is on an intimate practical acquaintance with the anatomical data involved, will do much to disseminate clearer views on the pathology and diagnosis of dilatation of the bronchial tubes.

The account of pneumonia will well repay the careful study of the reader, and the section upon the influence of leucocytosis as an element in estimating the prognosis of this disease is deserving of special attention. The bacteriology of pneumonia is also very adequately discussed from the standpoint of the practical physician.

The articles on pulmonary tuberculosis are, as we would expect, the longest in the volume. The remarks upon treatment are characterised by great practical wisdom, and in his discussion of special remedies, such as tuberculin, creasote, guaiacol, &c., the author everywhere adopts a most judicious and moderate mode of expression which cannot be too highly praised. In the section on "the site and progress of the lesions" in tuberculosis of the lungs we recognise the illustrative diagrams with which we had ten years ago become acquainted in Dr. Fowler's little book (reviewed in our pages, vol. xxx, 1888, p. 394) on *The Localisation of the Lesions of Phthisis*. In the letterpress to Fig. 96, p. 351, we note that the word "tuberculosis" has been used instead of the term "phthisis," employed in the description of Fig. 3, p. 17, of the original work referred to—a change in keeping with the modern view of the disease.

Pulmonary syphilis has also been carefully described, although we agree with the author in thinking that "the lesions of syphilis are rarely of such a nature as to produce signs by which they can be distinguished from others of an entirely different origin. The value of this chapter chiefly lies in the carefully recorded cases which it contains, and which may help future observers to place the diagnosis of pulmonary syphilis on a surer foundation.

Mr. Godlee's article on actinomycosis of the lung is a careful study of a disease still obscure to many, and is illustrated by a coloured plate and photographs.

Pulmonary osteoarthropathy is illustrated by the help of the Roentgen rays, and when we have said this we have said enough to convince our readers that the volume is thoroughly up-to-date.

Manual of Operative Surgery. By H. J. WARING, M.S., M.B., B.Sc.(Lond.), F.R.C.S. Edinburgh and London: Young J. Pentland. 1898.

To those of us accustomed to wading through what have up till now been regarded as the standard works on operative surgery, the publication of this manual comes as a most welcome relief.

A very thorough and careful perusal of this work is carried out with a degree of pleasure much above the usual experience of works of a similar character. It is evidently written upon lines intended to prove at once grateful and attractive, not merely to the tyro, but even to the more advanced student. Its value, too, must be greatly enhanced not merely by the clear and simple, almost conversational, nature of descriptions and explanations of the various surgical and operative procedures, but also by the essentially demonstrative and lucid diagrammatic equipment of its pages. Many of the diagrams are quite unique—not a few of a kind quite novel.

It must not be supposed that this illustrative portion of the work is faultless; not a few instances might be given where exception might well be taken. In this connection we might mention, *e.g.*, (1) The diagram of the Czerny-Lembert suture, where the two sutures are both through serous and muscular coats, and not, as they are generally understood, the inner through mucous and the outer through muscular and serous coats; (2) the diagram illustrating the method of holding the knife in making an amputation flap, where, to

the eye of one at all versed in such practice, the illustration would be more appropriately subscribed, "how *not* to hold the knife in making an amputation flap," inasmuch as the operator is shown holding the edge of his knife towards instead of away from the flap. But one need not carp at a few defects such as these, which will surely be rectified in a future edition, when the *tout ensemble* of the illustrative portion of the work is so good. It may be said at once that much of the virtue of this is gained by the absence of any attempt in most cases to achieve more than mere outline diagrams, and, to the student, for teaching purposes such are much more telling and educative.

As regards the scope of the work generally, a great advance is seen in this manual as contrasted with others of its kind, and that without enlarging its bulk much, if any, beyond the limits of a workable and convenient text-book. It treats, thus, fairly satisfactorily, subjects such as Pneumotomy, Paracentesis of Pleura and Pericardium, the various methods employed in the plastic surgical treatment of congenital defects such as Harelip, Cleft Palate, Spina Bifida, &c., devoting also chapters to surgical treatment of Nose, Ear, and Eye.

The portions of the work dealing with the surgery of the Mastoid region, complications, intracranially, of Chronic Purulent Otitis Media, and, indeed, Cerebral Surgery generally, are probably the least satisfactory in a manual which altogether strikes one as a distinct success, and a very marked advance upon anything previously produced of the same type, and having a similar scope. One would certainly feel strongly inclined to recommend it as the text-book *par excellence* for students of operative surgery.

Dental Surgery for Medical Practitioners and Students of Medicine. By A. W. BARRETT, M.B. Lond., M.R.C.S., L.D.S.E.
London: H. K. Lewis. 1897.

THIS readable and handy volume is much to be commended, as the writer has succeeded in giving a concise and systematic statement of those matters in dental surgery that are useful both for medical students and practitioners. It is to be regretted that so little attention is usually paid to the theory and art of the care of the teeth in the medical course of instruction, as it is obvious that the state of the teeth is often

the keynote to the state of the general health. The art of extracting the teeth and the treating of exposed nerves ought to be familiar to every country practitioner. In towns dental operations can usually be conveniently delegated to a dentist. But the chief use of a knowledge of dental surgery to the medical practitioner is from a diagnostic and prophylactic point of view. The family doctor should be the initial adviser regarding the general care of the teeth. Parents ought, indeed, to know so much at least of the phases of growth and development of children as to enable them to distinguish between deciduous and permanent teeth, and the shedding of the former and the eruption of the latter, so that when anything goes wrong, and interference becomes necessary, they may intelligently consult a dental surgeon. But, unfortunately, modern education does not furnish the individual with such knowledge and power of observation as are necessary to cope with those ills that are said to be attendant upon our present high state of civilisation. So, failing the parents, the family doctor should insist that about the age of 6, when the permanent teeth begin to make their appearance, means for the preservation of these should be adopted, and that the decaying and dead temporary teeth be carefully removed. But a high state of civilisation makes destructive inroads on good commonsense as well as rotting the teeth. The signs and symptoms of toothache are not obscure, nor do they escape observation, but a cowardly sympathy towards the patient, and negligence of the consequence because the disease is not immediately dangerous to life and there may be temporary pain in the treatment, are the reasons why parents act so foolishly as they do. The family practitioner will usually have to use both discretion and firmness in order to overcome the moral difficulties in this department of his calling.

Researches on Tuberculosis: the Weber-Parkes Prize Essay, 1897. By ARTHUR RANSOME, M.D., M.A. (Cantab.), F.R.S.
London: Smith, Elder & Co. 1898.

SELDOM do we come across a medical work which gives us anything like the pleasure we have derived from the perusal of this essay. The reasonable length, the excellent arrangement of the subject matter, and the accurate and condensed yet lucid style are valuable features of the book; but there are other advantages which, when added to these, become more important

than they. In the first place, the author has succeeded in doing what is very difficult, viz., in telling us something new about tuberculosis; and, in the second place, there is a quite manifest, though unobtrusive, optimism which permeates the whole book and brightens the horizon for those whose daily contact with tuberculosis in its advanced stages raises in their hearts feelings akin to despair. The one consolation for our inability to give an abstract of the whole work lies in the reflection that a copy of it ought to be studied by every medical practitioner for himself. The more the laity also know of its teaching the more rapidly is the disease likely to be stamped out of our midst.

Dr. Ransome gives us at the outset a chart constructed by himself and verified by Dr. Tatham, showing the yearly mortality from phthisis per 10,000 living in England and Wales from 1838 to 1894. It is remarkable how regular the decline has been (from over 38 in the earlier to 14 in the latter year, or almost two-thirds), and it is a striking fact that *the rate of diminution has been an increasing one*. "If phthisis diminishes at the same rate during another thirty years, it will have entirely disappeared by the end of that period." There is "no important bar to our hope of a speedy extinction of phthisis." We can only give some of the results of the author's inquiries.

Finely divided tuberculous matter, such as pure cultivations or tuberculous sputum, is rapidly deprived of virulence by exposure in daylight to free currents of air; less rapidly in the dark. In the absence of air-currents the bacillus long retains its power.

Organically charged vapour, whether coming from healthy or diseased lungs, or from cellars, or from comparatively pure ground, constitutes an *excellent cultivating medium* for the tubercle bacillus in the absence of light and fresh air; pure filter-paper, and still more common wall-paper, form an excellent supporting substance for such a culture, and on such paper the bacillus may grow at the ordinary temperature of a dwelling-room unless held in check by a sufficiency of light and air. One of the best disinfectants is a weak solution of chloride of lime.

The author recommends notification, not of all cases of phthisis, but of cases that might convey infection—that is, especially of those in which the bacillus has been found. He justly remarks that the great fall that has already taken place in the mortality was not due to notification, disinfection, or isolation.

Of medicinal agents he finds ozone, iodoform, and creasote of special service in treatment, though these do not appear to exercise any direct antagonistic action upon the bacillus itself. Many other drugs have been tried, but we cannot allude to them here. The book ought to be studied by every reader for himself.

Wiedersheim's Elements of the Comparative Anatomy of Vertebrates. By W. N. PARKER, Ph.D. London: Macmillan & Co. 1898.

THE second edition of Wiedersheim's "*Grundriss*" will be heartily welcomed by students in this country, with whom the book has been a favourite since its first appearance in English in 1886. In Germany two editions have been brought out in the interval, and in the process of evolution the volume has increased very considerably in size, and reaching as it does now in its latest form to some six or seven hundred pages, it bids fair to replace altogether the more important "*Lehrbuch*," no new edition of which has appeared during the last twelve years.

The present English edition is in no sense a transcript of the German original; the whole work has been rewritten, and while the author's descriptions are retained as far as possible, Professor Parker has distinctly succeeded in adapting the manual to the special requirements of our students. The work has proved in the past one of the best elementary treatises on the subject with which it deals, and in its new and somewhat enlarged form the reputation which it has already acquired is likely to be considerably enhanced.

In summing up the merits and defects of modern text-books, it would not be just to lay upon the author the blame for faults which depend entirely on the system of instruction and examination the requirements of which must be met.

The medical student of to-day, overburdened with sciences and periodically called upon to render an account of his knowledge to specialists in each department of his study, naturally seeks for short and easily acquired summaries of the details which he knows will be demanded of him in examination. Hence arises the necessity for which our author seeks to provide, and the shortcomings of his work spring, not unnaturally, from its brevity. To compress the description of the anatomy of the vertebrates into some four hundred well printed pages is a task of the difficulty of which Professor

Parker must have been conscious throughout all his work of preparation. To say that he has thoroughly succeeded would be almost equivalent to saying that he has accomplished the impossible. But, on the other hand, it must be admitted that the space which he has allowed himself has been most effectively utilised.

The descriptions are always clear and concise, and the illustrations with which they are accompanied are so numerous and so excellent that they furnish in themselves a most noteworthy feature of the work. The details, so far as they have been entered into, are generally, as was to be expected from Professor Parker's wide knowledge of the subject, most accurately given, and if note be made here of a slip to be found in the footnote on p. 61, with reference to *Plesiosaurus*, it is but calling attention to the exception which proves the rule. A special word of praise must be devoted to the bibliography, which is exceedingly complete.

Reference-Book of Practical Therapeutics by Various Authors.
Edited by FRANK P. FOSTER, M.D., Editor of the *New York Medical Journal* and of Foster's *Encyclopædic Medical Dictionary*. In Two Volumes. London: Smith, Elder & Co. 1897.

WE have much pleasure in recommending this large work, the leading idea in which has been to make it pre-eminently serviceable to the practising physician, to the favourable notice of our readers. It has been the aim of the editor to avoid too detailed reference to the mere physical and physiological action of drugs, and to mention only those which have a direct bearing upon medical practice, and upon the treatment of poisoning due to drugs. Profuse references to literature have also been avoided, but we think the ordinary reader will find all that he requires in this regard. An effort has also been made to weed out catch-penny and worthless preparations. But when all this has been done, the work still extends to two large quarto volumes of 652 and 618 pages respectively.

The subject matter of the volumes has been arranged in alphabetical order, and to all the larger articles the name of the author is appended, the minor articles and certain interpolations in the signed ones being from the pen of the editor himself. The value of the work as a book of reference is further enhanced by the presence of a supplement and three

separate and full indices. The indices alone occupy 160 pages—the first is a general index of drugs and classes of drugs; the second is an index of diseases and remedies; and the third is a list of authors cited. The volumes are likely to be of great service to the busy practitioner.

Braithwaite's Retrospect of Medicine. Vol. CXVI (July to December, 1897). London: Simpkin, Hamilton, Marshall, Kent & Co., Limited.

THIS, containing as it does "a retrospective view of every discovery and practical improvement in the medical sciences," certainly covers a wide field, and must be of considerable value from the point of view of reference, if of no other. One can but expect that the relative space assigned to the various subjects treated of will be determined, no doubt quite unintentionally, but still none the less certainly and unavoidably, by the individual predilection and trend of the mind of the author. The field covered is indeed a wide one, including—of course, mainly from the point of view of treatment—a survey of general medicine and therapeutics; diseases of the nervous, circulatory, respiratory, digestive, urinary systems and organs; and also of general surgery and therapeutics, the surgery of the nervous system, alimentary canal, urinary and reproductive organs; and also the special branches of eye, ear, skin, &c. One can wonder at the assiduity and bibliographical perseverance of the authors who cover such a field, and manage to compress the most salient features of the world's advance in medical and surgical knowledge during successive periods of six months into such a comparatively compact and handy book of reference as we have before us.

One cannot here attempt to single out items of outstanding general interest. Such would appeal to each individual differently, according to mental bias and individual leaning. One can only commend the thoroughness and completeness of the *Retrospect*.

Clinical Lectures on Urine. By J. ROSE BRADFORD, M.D., D.Sc., F.R.C.P., F.R.S. London: The Medical Publishing Co., Limited. 1897.

THESE nine lectures were delivered at University College Hospital in the winter of 1896, and were reported at the time. The style, therefore, is conversational. The matter is

admirable. The subject is gone into with great thoroughness, and physicians who are possessors of all the information that is imparted here are to be congratulated. On the other hand, even junior students might well be taught some facts that are omitted by Dr. Bradford, and the absence of illustrations is another feature that renders this work insufficient of itself for beginners. Senior men ought to find it very useful. It is stated in the preface that a few verbal corrections were made in the lectures after they were reported. One or two more are still desirable, and the punctuation is very often faulty. Besides, even lectures, we think, might have been more systematically put together, and this would have been an improvement.

We notice that Dr. Bradford says that diminution of the chlorides in the urine is not characteristic of pneumonia; "it is really more characteristic of a high temperature" (p. 107). We demur to the affirmative part of this proposition. In a case of acute rheumatism complicated with pneumonia the chlorides in the urine after being practically absent may become abundant after a period which may be reasonably supposed to correspond to the duration of the febrile stage of a lobar pneumonia, and yet without any definite corresponding fall in the temperature.

We heartily commend this little work.

Medical and Surgical Reports of the Boston City Hospital.
Ninth Series. Edited by CHARLES F. FOLSOM, M.D.; W. T. COUNCILMAN, M.D.; and H. L. BURRELL, M.D. Boston: Published by the Trustees. 1898.

WE congratulate the trustees of the Boston Hospital upon the value of the present volume of reports as a contribution to medical literature. It consists of 270 octavo pages, and contains in all twenty-one papers of great general interest and importance. The first three of the series deal with diphtheria from various points of view, based on the records of 800 cases of the disease observed at the South Department of the Hospital. The second and third papers deal with the heart complications and the changes in the nervous system met with in diphtheria. All three papers cannot fail to be of the greatest service to other workers engaged in the study of this important disease. The other papers are of the general nature usually found in such a volume.

ABSTRACTS FROM CURRENT MEDICAL LITERATURE.

SURGERY.

By T. W. JENKINS, M.A., M.D.

A Case of Rupture of the Liver Successfully Treated by Abdominal Section. By Chr. Martin, Birmingham.—Diagnosis made in case of young man crushed between railway trucks, the symptoms being those of progressive intra-peritoneal hæmorrhage and advancing peritonitis, unaccompanied by signs of injury to lungs, stomach, intestines, kidneys, and bladder. Median incision above umbilicus and removal of immense quantity of black blood, fluid and clotted. "A rent, from one to two inches deep, ran from before backwards on the under surface of the right lobe, from the portal fissure to as far up the posterior surface as could be reached." A detached fragment of liver tissue floated amongst the clots. Treatment consisted of removal of all effused blood, irrigation of the abdomen with hot water aided by small incision above pubes, and drainage by glass tubes, one going down to bottom of rent in liver, the other to Douglas' pouch. There was a considerable bloody discharge for some hours, *nearly all coming from the lower tube*. Recovery was retarded by an attack of pneumonia. Martin attributes the good result to the free irrigation of the peritoneal cavity with hot water, and to thorough drainage. The situation of the wound precluded suturing or packing with gauze. He also lays weight upon draining the pelvic pouch by a suprapubic incision.—(Reprint from *Birmingham Medical Review*, May, 1897.)

Successful Removal of a Large Pedunculated Accessory Lobe of the Liver. By Chr. Martin, Birmingham.—In 1884 the patient, a woman, æt. 36, noticed a small lump immediately below the right costal margin. Growth was at first slow, later rapid, till in 1896 it was as large as a six months' gravid uterus. The patient had lost flesh and strength, and had suffered from bilious attacks (no jaundice) and pain. The tumour felt like a tense cyst, and was very mobile, moving with respiration, and separated from liver dulness by narrow zone of resonance. *Diagnosis dubia*.—Laparotomy. The tumour was a smooth green ovoid mass, attached by a broad highly vascular pedicle to the anterior border and under surface of the liver. The gall-bladder was firmly attached along the inner half of the anterior surface of the tumour, and the cystic duct could be followed upwards along the left border of the pedicle to the under surface of the liver. The pedicle, 3 inches by 4 inches, was composed of the cystic duct, numerous large arteries and veins, and some fibrous tissue, all surrounded by peritoneum. No inflammatory adhesions. Removal of tumour and gall-bladder. Recovery.

Examination of the tumour showed it to be a pedunculated accessory lobe of the liver, which, after remaining quiescent for years, became the seat of degenerative (sarcomatous?) changes and interstitial hæmorrhage.—(Reprint from *Birmingham Medical Review*, February, 1898.)

Total Extirpation of the Bladder.—Tuffier and Dujarier describe a case of removal of the bladder in a man for carcinoma. I-shaped incision immediately above pubes. Isolation of bladder without opening peritoneum. Catheterisation of ureters; small opening made on each side of rectum and ureters drawn down to bowel by traction of catheters passed into rectum and through anus; ureters sutured to the rectum. After discussing various methods, the authors suggest it would be better to connect ureters with

sigmoid flexure. The patient made a good recovery, and was able to follow his usual employment.—(*Revue de Chirurgie*, April, 1893.)

Syphilitic Diseases of the Uterus.—Legrain (*Annales des Maladies des Organes Génito-Urinaires*, April, 1898) calls attention to a form of metritis due to syphilis, characterised by great enlargement and induration of the organ, and readily yielding to anti-syphilitic treatment. More than likely such cases are often regarded as fibroid tumours.

General Infection in Gonorrhœa.—Akinan (*Arch. f. Dermatol. u. Syphil.*, vol. xxxix) narrates the case of a young man attacked on the fifth day of the disease by cystitis, and later by arthritis of wrists and ankles. Fluid removed from tendon of anterior tibial yielded a pure culture of the gonococcus. The same organism was found in blood drawn from a vein at the elbow, and cultures made therefrom produced in an individual *qui a voulu de se prêter à cette expérience* gonorrhœa, and a few days later synovitis of the tendons of dorsum of foot.

PATHOLOGY.

The Origin of the Hæmorrhagic Infarction of the Lung (Akara Fingami, *Virchow's Arch.*, vol. clii, 1898, pp. 61 and 193).—The origin and mode of formation of the hæmorrhagic infarction are subjects on which such distinguished observers as Virchow and Cohnheim have worked and written. It was thought that the embolic nature of these lesions was fully determined, till, in 1891, Grawitz published an elaborate work in which it is asserted that the infarction of the lungs has nothing to do with embolism. It is merely the result of the bursting of the newly formed vessels which are produced in the peribronchial or interlobular connective tissue as a consequence of the chronic lung disturbance that exists in cardiac cases. The blood so effused passes into bronchi and neighbouring alveoli and is thence distributed. This implies that before we can have the infarction we must have a preceding alteration in the structure of the lungs, and it excludes the production of infarctions experimentally by embolism in healthy animals. It is acknowledged by all who have worked at the subject that infarction is very difficult to produce in the lungs of healthy animals, and that there may be extensive embolism without infarction. On the other hand, the observations of the present author strongly support the contention that, where efficiently produced, a pure mechanical obstruction of the branches of the pulmonary artery is capable of producing the infarction in perfectly healthy animals. In his experiments he uses paraffin of a low melting point (50° C.) and introduces it into a vein when, after being heated to 100° C., it is just solidifying. By this means a very complete obstruction is obtained as the still plastic paraffin moulds itself to the arterial wall. The result is not always infarction, but it is so in a certain proportion. Turning to man, the author finds embolism in all his cases, and the conditions are not essentially different to those in animals. The chief difference is that embolism produces the infarction much more frequently in men than in animals, and this he ascribes to the impeded circulation in cardiac cases. In man, as well as in animals, he finds no support for the view that the blood comes from the peribronchial connective tissue. On the contrary, it is in the central parts of the infarction, those furthest from the bronchi, that he finds the blood most altered, and therefore oldest, and it is here also that necrosis is most uniform. The embolic view, which had somewhat receded under the impact of Grawitz and Professor Hamilton, may now be said to have regained its commanding position, supported as it is by such authorities as Cohnheim, Virchow, and Orth. The present paper is the result of observations made in Virchow's laboratory under the supervision of Virchow and Oestreich.—J. C.

DISEASES OF THE THROAT.

By JOHN MACINTYRE, M.B.

Formaldehyde in Atrophic Rhinitis.—Dr. Geo. L. Richards contributes a short article to the *Laryngoscope* in which he advocates the use of formaldehyde in atrophic rhinitis. His description is as follows:—"Observing the powerful germicidal properties of aqueous solutions of formaldehyde, it occurred to me to try what effect it would have when used in atrophic rhinitis; not to displace any treatment which might be in use, but as an adjunct, for I have not myself used it alone to the exclusion of other remedies. I have used it as follows:—After removal of all the crusts and *débris* with a weak alkaline solution by means of a syringe and cotton applicators, I have then washed out each nostril thoroughly with a solution of formaldehyde containing about 5 to 10 drops of the 40 per cent solution to 8 oz. of warm water. As it is very irritating even in dilute solutions, a preliminary spraying of the nose with cocaine is advisable. It produces always a sense of smarting throughout all of the nasal mucous membrane with which it comes in contact, lasting, however, but a short time. At home I have 1 drop added to the solution which the patient uses in the douche cup for the daily cleansing. Under its use the crusts diminish in number, and all unpleasant odours cease. This is reported as a preliminary note, with the hope that others will try the remedy, and report on the same."

Tuberculin in the Treatment of Tuberculosis.—Drs. Bussenius and Cossmann have written a work on this subject. The question is discussed in a fair, dispassionate way, and the authors have done good service in showing how limited the field is in which we may expect reliable results. The subject is well reviewed, and the authors relate thirty-four cases. The contraindications are very well put. They emphasise the selection of cases, and especially condemn its application when there is fever.

Modification of Bartoux's Laryngo-Phantom (*Journ. Laryn.*, May, 1898).—This well-known model, which has proved of considerable service in teaching, has been modified by Dr. Dundas Grant. It is made by Mr. Trood, of Wigmore Street, London.

The Presence of Microbes in the Nose in Health (*British Journ. Laryn.*, May, 1898).—Some time ago Messrs. Thomson and Hewlett gave the results of their investigations of the upper nasal passages, with the result that a considerable difference of opinion was expressed between them and other writers on the subject. H. Park and J. Wright have again written upon this question, inasmuch as the two former named writers have thrown some doubt upon the work of Dr. Wright. In the present experiments a series of thirty-six normal individuals were chosen, every precaution being taken to exclude any possible error. Tubes of gelatine and serum or agar and serum plates were employed, with the results as below. While it may be admitted that the nasal fossæ are not so rich in micro-organisms as was formerly supposed, this is no doubt due (1) to the action of gravity, causing a constant flow of fresh mucus from the upper parts which are not freely accessible to the air currents; (2) to the action of the cilia, which aids the effects of gravity; (3) to the fact that the mucus, though not bactericidal to most microbes, is not a good culture medium; (4) to the filter action of the vibrissæ (these hairs are absent in children and sparse in women); (5) to the fact that inspired air usually contains few pathogenic germs.

A Foreign Body in the Oesophagus (*British Journ. Laryn.*, May, 1898).—Dr. Dundas Grant gives a case in which the distal part of a spray tube

became detached while spraying the larynx. The tube was one of metal the thickness of a goose quill, and two inches in length. The ordinary methods having failed to show the position of the foreign body, the x rays were suggested. While the preparations for these were in progress, the patient was describing in a somewhat animated fashion the discomfort which he experienced, notably the increase of pain at the epigastrium when he bent forward. In his anxiety to demonstrate this he bent his body to a considerable extent, and while he was doing this the spray tube was forcibly expelled from his mouth on to the floor. Apparently it had not got beyond the cardiac orifice.

DISEASES OF THE SKIN.

By W. R. JACK, M.D., B.Sc.

A Case of Monilethrix—Gilchrist (*Journal of Cutaneous and Genito-Urinary Diseases*, April, 1898) describes the second case of this disease recorded in America. It differs in some important respects from any of the sixty cases hitherto on record. The main points of interest are as follows:—(1) The patient was perfectly healthy, and of particularly cleanly habits; (2) the disease commenced at about 17 years of age, and not congenitally; (3) the lesions were perfectly symmetrically situated upon the legs and thighs, the scalp being unaffected; (4) there was only a slight keratosis pilaris; (5) fracture of the hair was either clean or fibrous, the latter implicating only the cuticle; (6) when pulled, the hairs broke at the constriction (never at the node), and left a brush-like ending; (7) there was relatively more pigment at the constrictions than in the nodes; (8) there was no evidence of contagion or of any one in the family having had a similar affection; (9) there was evidence of spontaneous cure, as, after nine years, the hair returned on the right thigh; (10) no cause for the disease could be found—the bacillus of trichorrhexis nodosa was not present.

The author concludes that the disease is quite distinct from trichorrhexis nodosa, and that it has its origin in the hair-follicle, very near the papilla, the hair-shaft being secondarily affected. From the symmetry of its distribution in this case, and the absence of other causes, he conjectures that it is probably of tropho-neurotic origin.

Impetigo Herpetiformis (Hebra) in the Male.—In the same number of the *Journal*, Whitehouse puts on record a case of this disease occurring in the male. There are less than twenty-five cases recorded altogether, and of these only two have been observed in the male sex. Whitehouse first saw his patient—a man of 39—in 1893, when he was suffering from a severe universal eczema. He had been subject to eczema off and on for seventeen years. Two weeks afterwards he had a sharp chill, and the temperature rose. Next day groups of small pustules appeared on the abdomen and ankles, and were succeeded in five days by a fresh chill and a fresh crop of pustules. The fever and the pustules continued to appear at irregular intervals till October, when he had to take to bed, but after that there was a gradual improvement until December, when the eruption had left the trunk and head. In January, 1894, however, the health again suffered, and the eruption took on the characters of impetigo herpetiformis, but without becoming universal. The eczematous characters disappeared, and successive crops of small pustules came out at short intervals on the feet, hands, and fore-arms, and occasionally on the other parts of the body, where rounded patches were formed with dirty-looking crusts in the centre, surrounded by one or more rows of small pustules. The disease gradually progressed, each

crop of pustules being attended by fever. Diarrhoea set in in November, and the patient died comatose in January, 1895. The fever was throughout of a remittent type, but never higher at night than $102^{\circ}4$.

Acute Pyrexial Pustular Dermatitis.—Leslie Phillips (*British Journal of Dermatology*, March, 1898) records a case which in some points resembles the last. The patient was a married woman of 27, who was not pregnant. The rash affected the back of the arms, fore-arms, and hands, the back of the trunk, and both aspects of the lower limbs. Its element was "an inflamed, irregular-shaped or roundish patch, seated on which were many primary pustules, each nearly as large as a pea." They did not break spontaneously, but "involution took place by drying or absorption, beginning in the centre of the patch." There was marked constitutional disturbance, the temperature running as high as 103° . When the patient was put to bed, however, she rapidly improved, and in twenty days was practically well. No antecedent cause could be found. Phillips thinks that such cases as this should be associated with impetigo herpetiformis, and with Hallopeau's case of pustular dermatitis, as "a group of pustular dermatoses, owing a pyæmic or systemic pyococcic infection," and he considers Hallopeau to be probably correct in attributing them to "a form of chronic pyogenic infection, limited to the teguments." It is too dogmatic to claim that small details with regard to the size of pustules, &c., are essential features of a disease which is of the nature of a pyococcic invasion.

Dermatitis Herpetiformis.—In the same number of the *Journal* there appears a paper on this subject by Allan Jamieson, who adopts Unna's definition of the disease. All the types described by Duhring ought to be regarded as confined under dermatitis herpetiformis, along with herpes gestationis, hydroa vacciniforme, and Hutchinson's recurring summer rash. The author has recorded a case which formed a connecting link between dermatitis herpetiformis and impetigo herpetiformis. Although the nature of the eruption is variable, the occurrence of erythema is a very constant feature of the disease. On examination of the blood and serum of the bullæ, it has been found that there is a distinct increase in the number of eosinophile cells. Unna thinks that they are not produced in the skin, but that their presence there shows that the irritant there acts in a leucotactic manner upon them. But this does not account for their increase in the blood. McCall Anderson has noted another hæmic change—viz., hæmatoporphyria—in two brothers affected with hydroa vacciniforme.

With regard to microscopy, Elliot locates the commencement of the disease in the rete and intercapillary cones, while Gilchrist takes the upper limit of the corium as the starting point. The corium is infiltrated with cells, partly eosinophile. The nerves in the upper part of the corium are infiltrated, as the result of parenchymatous neuritis. The pathology of the disease is that of a paroxysmal neurosis, both sensory and trophic. Hallopeau's hypothesis that the cause "may lie in the centrifugal development of some infectious agent, probably a toxin," is not unlikely. The seat of change is probably in the cutaneous nerve-endings.

In discussing treatment, Jamieson extols arsenic, especially in combination with strychnine. Locally, he has found ichthyol and sulphur the most usual drugs, although ichthyol is not of much value internally.

In the subsequent discussion (reported in the April number of the *Journal*), Radcliffe Crocker did not agree that hydroa æstivale was allied to dermatitis herpetiformis. Herpes gestationis was only dermatitis herpetiformis with a special etiology. He thought the latter a clinical entity, pathogenetically allied to pemphigus. Colcott Fox emphasised the claim of his brother, Tilbury Fox, to be regarded as a pioneer in this region of disease. He thought that the change of type in different attacks, the tendency to herpetiform grouping, and to multiformity of eruption, ought to be mentioned among the characters of the disease. He would not include hydroa æstivale, but impetigo herpetiformis, Hallopeau's

eruption, and herpes gestationis were one with the disease in question. He extolled nerve tonics, but had found arsenic a failure. Barendt mentioned a case where the relation to pregnancy was very obvious. Stopford Taylor said that out of 8,000 or 9,000 cases of skin disease, he had seen only five of dermatitis herpetiformis. Malcolm Morris had seen it end four times in death. J. J. Pringle asked whether the condition was a distinct disease or merely a type of a large group of bullous affections. Eosinophilia could not be held to be diagnostic. Galloway said that in these cases the skin was peculiarly vulnerable, and Whitfield said that too much stress might be laid upon the presence of eosinophilia, as it was to be found in pemphigus and erythema multiforme. Stephen Mackenzie emphasised the herpetic arrangement of the lesions, and did not include hydroa aestivale. In protracted cases the epidermis became "paper-like." Arsenic controlled the disease, but was not curative. Locally, he relied most upon sulphur.

In his reply, Jamieson remarked that the condition was to be regarded both as a disease and a type. In one of Tilbury Fox's drawings there was no grouping, and the lesions resembled those of hydroa vacciniforme. Scars might be left, but whether they were permanent or disappeared after a time he could not say.

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- On Failure of Brain Power (Encephalasthenia): its Nature and Treatment, by Julius Althaus, M.D. Fifth Edition, Enlarged and Revised. London: Longmans, Green & Co. 1898. (5s. net.)
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- A Treatise on Aphasia and other Speech Defects, by H. Charlton Bastian, M.A., M.D. With Illustrations. London: H. K. Lewis. 1898. (15s.)
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- The Determination of Sex, by Dr. Leopold Schenk. Authorised Translation. London: The Werner Company. 1898. (5s.)
- Die Infectiös-eiterigen Erkrankungen des Gehirns und Rückenmarks, Meningitis, Hirnabscess, Infectiöse Sinusthrombose, von William Macewen, M.D. Autorisirte Deutsche Ausgabe von Dr. Paul Rudloff, Ohrenarzt in Wiesbaden. Mit zahlreichen Abbildungen. Wiesbaden: Verlag von J. F. Bergmann (Glasgow: obtainable from F. Bauermeister.) 1898. (16s.)
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**GLASGOW.—METEOROLOGICAL AND VITAL STATISTICS FOR
THE FOUR WEEKS ENDING 21st MAY, 1898.**

	WEEK ENDING			
	April 30.	May 7.	May 14.	May 21.
Mean temperature, . . .	48·2°	50·4°	47·2°	47·8°
Mean range of temperature between day and night, .	14·0°	17·5°	16·1°	20·7°
Number of days on which rain fell,	3	4	4	4
Amount of rainfall, . . ins.	0·73	1·29	0·54	0·45
Deaths registered, . . .	310	317	325	303
Death-rates,	22·3	22·8	23·3	21·8
Zymotic death-rates, . . .	4·2	4·2	3·8	4·2
Pulmonary death-rates, .	6·1	7·2	6·7	6·2
DEATHS—				
Under 1 year,	69	62	56	64
60 years and upwards, . .	56	53	61	50
DEATHS FROM—				
Small-pox, . . . . .	...	...	...	...
Measles,	30	23	27	15
Scarlet fever,	4	1	2	3
Diphtheria,	1	1	...	3
Whooping-cough,	16	18	17	22
Fever, . . . . .	...	4	5	2
Diarrhoea,	7	11	2	13
Croup and laryngitis, . .	1	...	1	2
Bronchitis, pneumonia, and pleurisy,	59	75	69	60
CASES REPORTED—				
Small-pox, . . . . .	...	...	...	...
Diphtheria and membranous croup,	7	7	1	10
Erysipelas,	24	14	16	11
Scarlet fever,	33	44	47	57
Typhus fever,	2	3	...	2
Enteric fever,	14	14	17	13
Continued fever,	1	1
Puerperal fever,	4	...	2	...
Measles,*	544	421	328	252

* Measles is not notifiable.

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